CONSERVATION LAW FOUNDATION

December 17, 2004

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Ms. Thelma Murphy
U.S. Environmental Protection Agency (CMA)
One Congress Street, Suite 1100
Boston, MA 02114

Re: Notice-of-Intent Submissions of New Hampshire Small-MS4s

Dear Ms. Murphy:

The Conservation Law Foundation ("CLF") appreciates the opportunity to provide these general comments on the Small-MS4 program as it relates to regulated Small-MS4 entities in New Hampshire. Municipalities and other entities in New Hampshire that are subject to this program have submitted Notices of Intent ("NOI") seeking coverage under the Environmental Protection Agency's ("EPA") National Pollutant Discharge Elimination System (NPDES) General Permit For Storm Water Discharges From Municipal Separate Storm Sewer Systems ("General Permit"). These comments are based on CLF's review of many of these NOI submissions, as contained in EPA's files on November 18, 2004. We formally request that these comments be considered in the EPA's substantive review and decision-making relative to the NOI submissions and related materials of every regulated Small-MS4 entity in New Hampshire.

Founded in 1966, CLF works to solve the problems threatening our natural resources and communities in New Hampshire and throughout New England. Among those problems, CLF has worked, and continues to work, to promote effective regulations and strategies to reduce and minimize the significant impacts of stormwater pollution. It is widely acknowledged that "[s]tormwater runoff is one of the most significant sources of pollution in the nation, 'at times comparable to, if not greater than, contamination from industrial and sewage sources.'"[1] Stormwater pollution is of growing concern, particularly in light of intensifying growth and development in southern and coastal New Hampshire. For example, it has been identified as one of the greatest threats to the state's estuaries, including the Great Bay estuary, in light of intense development pressures in the Seacoast region and impervious surface coverage associated with low-density sprawl.[2]

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[1] *Environmental Defense Center v. Browner*, 344 F.3d 832, 840 (9th Cir. 2003), *cert. denied*, 124 S.Ct. 2811 (2004) (*citing* Richard G. Cohn-Lee and Diane M. Cameron, *Urban Stormwater Runoff Contamination of the Chesapeake Bay: Sources and Mitigation,* THE ENVIRONMENTAL PROFESSIONAL, Vol. 14, p. 10, at 10 (1992) and *Natural Res. Def. Council v. EPA*, 966 F.2d 1292, 1295 (9th Cir. 1992)).

[2] As one of the fastest growing regions of New Hampshire (which is the fastest growing state in New England), the seacoast watershed near and adjacent to the Great Bay estuary is under intense development pressure. In light of

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To address the significant impacts and threats associated with stormwater, it is imperative that New Hampshire's Small-MS4 entities—both individually and, where appropriate, in coordination with one another—engage in aggressive strategies to better manage stormwater runoff and promote smarter development patterns and practices that minimize stormwater volumes and pollutants. Proper implementation of the Phase II stormwater regulations, including those addressing Small MS4s, is essential to protecting New Hampshire's valuable surface water resources from the proven adverse impacts of stormwater.[3]

Properly implemented, the Small-MS4 regulations and the General Permit have the potential to achieve significant gains at the local level that *must* occur if the goals of the Clean Water Act are to be achieved. Unfortunately, however, it appears that weak and deficient Small-MS4 NOIs, accompanied by inadequate EPA review and oversight, appear to be pervasive in New Hampshire. Accordingly, and as set forth in greater detail below, we urge EPA to, *inter alia*: (1) clarify, as a procedural matter, that it will render a new decision relative to each NOI after it has engaged in a detailed, substantive review of each submission, (2) issue a new decision for each NOI, denying coverage under the General Permit for those submissions that fail to satisfy mandatory statutory, regulatory and General-Permit requirements, and (3) require Small-MS4 owners with legally deficient NOIs either to develop a substantially improved NOI that satisfies all legal requirements, or to pursue authority to discharge under an individual permit.

I. The EPA Must Conduct a Thorough Substantive Review of All NOIs to Ensure Compliance with the Clean Water Act.

In *Environmental Defense Center v. Browner* ("*EDC*"), the U.S. Court of Appeals for the Ninth Circuit recently addressed the type of review required for Notices of Intent ("NOIs") submitted by Small MS4s seeking coverage under a general permit.[4] Certain petitioners in *EDC* challenged the EPA's Small-MS4 regulations on the ground that they failed to require EPA to

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these trends, the NH Estuaries Project's Management Plan (2000) found that the greatest risks to New Hampshire's estuaries are from population growth and development, which can lead to degradation of water quality as result of stormwater runoff from impervious surfaces (roofs, parking lots and roads); increased shoreland development; and loss and fragmentation of habitat and open space as a result of sprawl. More recently, the Estuaries Project's 2003 *State of the Estuaries* report identified disturbing trends, which include: increasing land consumption rates and impervious surface cover as a result of sprawl development; very few large, unfragmented land blocks in the coastal watershed; and increasing nitrogen concentrations in Great Bay.

[3] As the EPA has acknowledged: "Storm water runoff from lands modified by human activity can harm surface water resources and, in turn, cause or contribute to an exceedance of water quality standards by changing natural hydrologic patterns, accelerating stream flows, destroying aquatic habitat, and elevating pollutant concentrations and loading." 64 Fed. Reg. 68,724 (Dec. 8, 1999). Section 305(b) reports submitted by the States, Tribes, and Territories in 1996 indicated that approximately 40 percent of the Nation's rivers, lakes and estuaries are impaired, and "found urban runoff/discharge from storm water sewers to be a major source of water quality impairment nationwide." *Id.* at 68,726.

[4] *Environmental Defense Center v. Browner*, 344 F.3d 832 (9th Cir. 2003), *cert. denied*, 124 S.Ct. 2811 (2004).

review the substance of NOI submissions to ensure compliance with the Clean Water Act, and that absent such a review the Small-MS4 program would amount to little more than a "paper tiger." In addressing this critical issue, the *EDC* Court started with the proposition that the Clean Water Act imposes certain substantive requirements that must, consistent with the clear intent of Congress, be satisfied by Small-MS4s seeking coverage under a general permit. Specifically, the Court found "the plain language of § 402(p) of the Clean Water Act, 33 U.S.C. § 1342(p), expresses unambiguously Congress's intent that EPA issue no permits to discharge from municipal storm sewers unless those permits 'require controls to reduce the discharge of pollutants to the maximum extent practicable.'"[5]

In light of the unambiguous requirements of the Clean Water Act, the *EDC* Court concluded in no uncertain terms that EPA *must* review the substance of NOIs to ensure compliance. As the Court explained:

> According to the Phase II Rule, the operator of a small MS4 has complied with the requirement of reducing discharges to the "maximum extent practicable" when it implements its stormwater management program, *i.e.*, when it implements its Minimum Measures. . . . Nothing in the Phase II regulations requires that NPDES permitting authorities review these Minimum Measures to ensure that the measures that any given operator of a small MS4 has decided to undertake will *in fact* reduce discharges to the maximum extent practicable. . . . Therefore, under the Phase II Rule, nothing prevents the operator of a small MS4 from misunderstanding or misrepresenting its own stormwater situation and proposing a set of minimum measures for itself that would reduce discharges by far less than the maximum extent practicable.
>
> In fact, under the Phase II Rule, in order to receive the protection of a general permit, the operator of a small MS4 needs to do nothing more than decide for itself what reduction in discharges would be the maximum extent practical reduction. No one will review that operator's decision to make sure that it was reasonable, or even good faith. Therefore, as the Phase II Rule stands, EPA would allow permits to issue that would do less than *require* controls to reduce the discharge of pollutants to the maximum extent practicable. . . . We therefore must reject this aspect of the Phase II Rule as contrary to the clear intent of Congress.[6]

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[5] *EDC*, 344 F.3d at 854. Of course, in addition to the "maximum extent practicable" requirement, the Clean Water Act and its regulations contain other important mandates, including the requirements (1) that discharges not cause or contribute to water quality violations, *see* discussion in Section II, below, and (2) that the Phase II stormwater regulations (of which the Small-MS4 regulations are a part) constitute a comprehensive program designed "to protect water quality." *EDC*, 344 F.3d at 844 (*citing* 33 U.S.C. § 1342(p)(6)).

[6] EDC, 344 F.3d at 855 (citations and parentheticals omitted) (italics in original). *See also id.* at 855, n. 32, stating, in pertinent part:

As a result of the *EDC* decision (which the U.S. Supreme Court declined to review on *certiorari*), EPA must, as a matter of law, engage in a meaningful review of every Small-MS4 NOI submission, to ensure compliance with the Clean Water Act and applicable standards. Materials contained in the EPA's files suggest that no such substantive review has occurred. Rather, it appears the EPA has employed a systematic approach of using a checklist to determine whether NOI submissions are "administratively complete" and, upon findings of "administrative completeness," granting New Hampshire Small-MS4s authority to discharge under the General Permit.[7] Because this approach is insufficient to determine whether the subject NOIs will ensure compliance with the Clean Water Act and applicable regulations and standards, the authority to discharge granted by the EPA is unlawful. The EPA's grant of authority to New Hampshire Small-MS4 entities also is unlawful because the public was not provided notice of the availability of the subject NOIs, nor was it provided the opportunity to comment on the substance of the NOI submissions in a public hearing or through written comments.[8]

> That the Rule allows a permitting authority to review an NOI is not enough; *every permit must comply with the standards articulated by the Clean Water Act, and unless every NOI issued under a general permit is reviewed, there is no way to ensure that compliance has been achieved.*
> The regulations do require NPDES permitting authorities to provide operators of small MS4s with "menus" of management practices to assist in implementing their Minimum Measures, *see* 40 C.F.R. § 123.35(g), but again, nothing requires that the combination of items that the operator of a small MS4 selects from this "menu" will have the combined effect of reducing discharges to the maximum extent practicable.
> . . . .
> Absent review on the front end of permitting, the general permitting regulatory program loses meaning even as a procedural exercise.

(Emphasis added).

[7] The files contain checklists used by EPA to determine which minimum measures have been addressed in the NOI submissions; this does not constitute meaningful review.

[8] As the *EDC* Court stated:

> [W]e conclude that clear Congressional intent requires that NOIs be subject to the Clean Water Act's public availability and public hearings requirements. The Clean Water Act requires that "[a] copy of each permit application and each permit issued under [the NPDES permitting program] shall be available to the public," 33 U.S.C. § 1342(j), and that the public shall have an opportunity for a hearing before an (*sic.*) permit application is approved, 33 U.S.C. § 1342(a)(1). Congress identified public participation rights as a critical means of advancing the goals of the Clean Water Act in its primary statement of the Act's approach and philosophy. *See* 33 U.S.C. § 1251(e); *see also Costle v. Pacific Legal Found.*, 445 U.S. 198, 216, 100 S.Ct. 1095, 63 L.Ed.2d 329 (1980) (noting the "general policy of encouraging public participation is applicable to the administration of the NPDES permit program"). EPA has acknowledged that technical issues relating to the issuance of NPDES permits should be decided in "the most open, accessible forum possible, and at a stage where the [permitting authority] has the greatest flexibility to make appropriate modifications to the permit." 44 Fed. Reg. 32,854, 32,885 (June 7, 1979).
> As we noted above, under the Phase II Rule it is the NOIs, and not the general permits, that contain the substantive information about how the operator of a small MS4 will reduce discharges to the maximum extent practicable. Under the Phase II Rule, NOIs are functionally equivalent to the permit applications Congress envisioned when it created the Clean Water Act's public availability and public hearing requirements. Thus, if the Phase II Rule does not make NOIs "available to the public," and does not provide for public hearings on NOIs, the Phase II Rule violates the clear intent of Congress.

Under *EDC,* EPA must engage in a meaningful substantive review of every NOI (after taking public comments into account) and determine whether each NOI fully complies with the Clean Water Act and applicable standards and regulations, including the requirements that the stormwater management program include controls to reduce the discharge of pollutants to the maximum extent practicable, that it ensure that discharges will not cause an instream exceedance of water quality standards, and that it specifically identify control measures and BMPs that will control pollutants of concern.[9]

As a procedural matter, the EPA's files contain no materials indicating that NOI submitters have been made aware of this public comment period and the further review that EPA is now required to undertake as a result of the *EDC* decision. If, in fact, EPA has not provided such notice, this omission is troubling in at least two respects. First, if NOI submitters were made aware of this public comment period and the recent holding of the *EDC* Court, they might be inclined to enhance the substance of their NOIs. Second, in furtherance of the goal of enhancing public participation, NOI submitters could have used their local public-notice procedures, in compliance with state law, to notify the public (as well as boards and commissions within their municipalities) of this comment period. This, of course, could have resulted in more public scrutiny and comment on NOI submissions.

II. EPA Must Determine Whether Small-MS4 Owners Have Met Their Burden of Demonstrating that Their Discharges Will Not Cause or Contribute to State Water Quality Violations and that Their Stormwater Management Program will Control Pollutants of Concern and Ensure No Instream Exceedance of Water Quality Standards.

A central tenet of the Clean Water Act as well as the Small-MS4 program is the requirement that NPDES permits ensure compliance with water quality standards. This requirement is reiterated in the Clean Water Act (CWA), its regulations, case law, and the Small-MS4 General Permit.

In enacting the CWA, one of Congress' principal goals was to "recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, [and] to plan the development and use (including restoration, preservation, and enhancement) of land and water resources."[10] In accordance with this goal, the CWA is clear

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EDC, 344 F.3d at 856-57. *See also Costle v. Pacific Legal Foundation*, 445 U.S. 198 (1980) (interpreting Section 1342(a)(1) of the Clean Water Act, which allows EPA to issue a discharge permit only "after opportunity for public hearing," to necessarily require a 30-day public comment period). While EPA is now providing the comment period pursuant to which these comments are being submitted, this comment period post-dates EPA's grant of authority to discharge, contrary to the mandate of the Clean Water Act.

[9] *See* discussion below addressing legal requirements of the CWA and applicable standards and regulations.

[10] 33 U.S.C. § 1251(b).

that all provisions in a NPDES permit must comply with state water quality standards.[11] This requirement is reiterated in regulations promulgated pursuant to the CWA,[12] including the Phase II stormwater regulations pertaining to Small-MS4s, which explicitly state that an NPDES MS4 permit:

> will require *at a minimum* that [an operator of a Small MS4] develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from [its] MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.[13]

Consistent with the above requirements, the General Permit makes clear, as a threshold matter, that "[d]ischarges that would cause or contribute to instream exceedance of water quality standards" are not eligible for coverage.[14] It further mandates that stormwater discharge programs "must include a description of the BMPs that will be used to *ensure* that this [i.e., exceedance of instream water quality standards] will not occur."[15] Part I.C of the General Permit, entitled "Discharges to Water Quality Impaired Waters," further states:

1. The permittee must determine whether storm water discharges from any part of the MS4 contribute, either directly or indirectly, to a 303(d) listed water body.

2. The storm water management program must include a section describing how the program will control the discharge of the pollutants of concern and *ensure* that the discharges will not cause an instream exceedance of the water quality standards. This discussion must *specifically identify* control measures and BMPs that will collectively

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[11] *See* 33 U.S.C. § 1370 (allowing state water quality standards to be more stringent than federal technology-based standards); 33 U.S.C. § 1341(a) (requiring compliance with water quality standards of both the state where the discharge originates and of any state affected by the discharge). The requirement that permits comply with state water quality standards allows no exceptions for cost or technological feasibility. *In re City of Fayetteville, Ark.*, 2 E.A.D. 594, 600-01 (CJO 1988) (interpreting the language of section 301(b)(1)(C) to require "unequivocal compliance with applicable water quality standards," and prohibit "exceptions for cost or technological feasibility"), *aff'd sub nom.* Arkansas v. Oklahoma, 503 U.S. 91 (1992).

[12] *See* 40 C.F.R § 122.4(d) ("No permit may be issued: . . . (d) When the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States"); 40 C.F.R § 122.44(d)(1), (d)(4) ("[E]ach NPDES permit shall include conditions meeting the following requirements when applicable: . . . (d) any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318, and 404 of CWA necessary to: . . . (1) [a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality . . . .").

[13] 40 CFR § 122.34(a) (emphasis added).

[14] NPDES General Permit for Stormwater Dischargers from Small Municipal Separate Storm Sewer Systems ("General Permit"), Part I.B.2 (k)

[15] *Id.*

> control the discharge of the pollutant(s) of concern. Pollutant(s) of concern refer to the pollutant identified as causing the impairment.[16]

EPA's Response to Comments on the draft General Permit reiterates the importance of specifically addressing discharges to impaired waters: "Part I.C.2 is intended to address the situation where waters have been identified as impaired by a pollutant which the MS4 will discharge. In such situations, more aggressive storm water strategies would likely be necessary than in the situation where the waters are not impaired."[17] In the event that stormwater discharges authorized under the General Permit are shown to have reasonable potential to cause or contribute to a violation of a water quality standard, the permittee may be required to operate under an individual NPDES permit or face permit modification.[18]

Finally, Part III of the General Permit, which specifically applies in New Hampshire, imposes the following mandatory duty on Small MS4s in their creation of stormwater management programs: "The permittee must develop, implement and enforce a program to reduce the discharge of pollutants from the MS4 to the maximum extent practicable; protect water quality, *and satisfy the water quality requirements of the Clean Water Act and state water quality standards*."[19]

→As a result of the *EDC* decision, the EPA must make a substantive determination whether the NOI satisfies all of the above requirements.

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[16] *Id.* at Part I.C (emphasis added). In addressing pollutants of concern, NOIs must address pollutants that secondarily cause or contribute to impairments. *See* EPA's Response to Comments on Draft Small-MS4 General Permit, p.6, stating:

> If there is an impaired water, the pollutant causing the impairment is usually listed. If the permittee discharges the pollutant which causes the impairment, the storm water management program must include best management practices (BMPs) designed to address such pollutant. In situations where a specific pollutant isn't listed, but rather an effect such as "low DO", is listed, the permittee should attempt to determine the secondary cause which produces the effect listed as the impairment. The permittee should attempt to address the secondary cause in the storm water management program, if possible.

It should be noted that CLF disagrees with EPA's use of the word "attempt" in the third and fourth sentences of the above-quoted paragraph. Owners and operators of Small-MS4s have a mandatory duty to *ensure* that their discharges will not cause an instream exceedance and, therefore, in "addressing" pollutants of concern must *actually implement* actions necessary to prevent discharges from causing or contributing to water quality impairments.

[17] EPA's Response to Comments on Draft Small MS4 General Permit, p. 6.

[18] General Permit, Part VIII.

[19] *Id.* at Part III.A (emphasis added).

III. NOI Submissions from New Hampshire Small-MS4s Generally Fail to Properly Address, as a Threshold Matter, Whether Discharges are Eligible for Coverage Under the General Permit.

A. The General Permit Does Not Cover Discharges that Cause or Contribute to Instream Exceedance of Water Quality Standards.

The General Permit explicitly states that it does not authorize "[d]ischarges that would cause or contribute to instream exceedance of water quality standards."[20] Few NOIs have engaged in any substantive analysis of whether discharges from the subject Small-MS4s will cause or contribute to instream water quality impairments. For example, while the Town of Bedford's NOI[21] identifies certain receiving waters as impaired, Section 7b of its first Annual Report states: "Determination of discharges to impaired waters has not been completed as of yet. Upon completion of outfall mapping, determinations will be made." Because this outfall mapping is scheduled for completion "by end of 5 year permit term," Bedford apparently does not intend to complete its identification of receiving waters, including impaired waters, for some time. This approach is inconsistent with the requirements of the General Permit, as well as requirements under the Phase II regulations, and should not be allowed. Rather, unless and until NOIs include a full accounting of impaired receiving waters, and of whether discharges are causing or contributing to instream water quality violations, coverage under the General Permit is not allowed.

In addition to the above, it is critical to note that since the 2003 NOI initial filings submitted by New Hampshire Small-MS4 owners, New Hampshire's 303(d) list of impaired waters has been expanded substantially to include many more water bodies. Few New Hampshire Small-MS4 owners have submitted updated materials acknowledging this fact and determining whether their discharges cause or contribute to recently-listed impairments. For example, the Town of Salem's NOI identifies numerous receiving water bodies, listing none of them as impaired. Despite the fact that certain of these water bodies—such as Canobie Lake, Policy Brook and Porcupine Brook—now appear on New Hampshire's 2004 303(d) list, Salem has failed to update this critical information and conduct the necessary related analysis to demonstrate that its MS4 discharges are eligible for coverage under the General Permit. *See also* Town of Exeter's NOI (listing no receiving water bodies as impaired; identifying 21 outfalls to the Squamscott River and 10 outfalls to the Exeter River, each of which is now designated as

[20] General Permit, Part I.B.2(k).

[21] These comments reference NOIs submitted by certain municipalities for purposes of illustration. The fact that one municipality's NOI may be identified to the exclusion of others should not be interpreted by EPA as an indication that NOIs submitted by *other* municipalities do not contain similar deficiencies. Moreover, when reference is made to a deficiency in a specific NOI, EPA should not interpret these comments as implying that *other* deficiencies within the NOI do not exist. Again, references in these comments to specific deficiencies in specific NOIs are for purposes of illustrating types of deficiencies that may be common to other NOIs, and which EPA should look for when reviewing all NOIs.

impaired on New Hampshire's 2004 303(d) list); CLF's comments relative to NOI submissions of Greenland and Portsmouth.

In short, it appears the critical threshold eligibility requirement set forth in Part I.B.2(k) of the General Permit has been largely ignored by New Hampshire entities. Materials contained in EPA's files indicate that EPA, as well, has not adequately engaged in this requisite threshold analysis.

B. The General Permit Does Not Cover Discharges Not in Compliance with New Hampshire's Antidegradation Policy.

The General Permit makes clear that it does not authorize discharges prohibited under 40 CFR 122.4, including "discharges not in compliance with the state's antidegradation policy."[22] New Hampshire's antidegradation policy, codified at N.H. Rules Part Env-Ws 1708, applies to:

(a) Any proposed new or increased activity, including point source and nonpoint source discharges of pollutants, that would lower water quality or affect the existing or designated uses;
(b) A proposed increase in loadings to a waterbody when the proposal is associated with existing activities;
(c) An increase in flow alteration over an existing alteration; and
(d) All hydrologic modifications, such as dam construction and water withdrawals.[23]

The U.S. Supreme Court has recognized that State antidegradation implementation shall, *at minimum*, maintain existing instream water uses and the water quality necessary to protect such uses.[24] The Supreme Court has affirmed EPA's determination that "no activity is allowable . . . which could *partially or completely* eliminate any existing use."[25]

If granted coverage under the General Permit, an MS4 owner will be permitted authority to discharge stormwater for several years. If, during that time, development occurs within the

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[22] General Permit, Part I.B.2(i).
[23] N.H. Rule Env-Ws 1708.02.
[24] *PUD No. 1 v. Washington Dep't of Ecology*, 511 U.S. 700, 718-719 (1994).
[25] *Id.* (emphasis added). *See also* 1998 ANPRM, 63 Fed. Reg. at 36,742 at 36, 781:

> Section 131.12 (a)(1) of the antidegradation policy contained in the water quality standards regulation requires that existing uses and the water quality necessary to protect them be maintained and protected. *This provision, in effect, establishes the floor of water quality in the U.S.* It also protects the environment where the existing use of a water body happens to be better than the use designated by the State or Tribe. An existing use as defined in 40 CFR 131.3 can be established by demonstrating that a use has actually occurred since November 28, 1975, or that the water quality is suitable to allow such uses to occur, whether or not such uses are designated uses for the water body in question. *All waters of the U.S. are subject to tier 1 protection.*

Emphasis added.

urbanized area, the volume and pollutant-loadings of stormwater collected by and discharged from the MS4 could increase. In other words, absent effective stormwater and growth management, an MS4 owner could be forced to handle more stormwater, with more contaminants, generated by new or increased activity (i.e., new stormwater-generating development projects). These changes could have adverse effects on water quality and existing or designated uses. Such a scenario triggers—and requires compliance with—New Hampshire's antidegradation regulations.[26]

New Hampshire entities seeking coverage under the General Permit must affirmatively demonstrate that discharges from their MS4 will—taking into account increasing volumes and pollutant-loadings associated with reasonably foreseeable future development—comply with New Hampshire's antidegradation policy, as codified in N.H. Rules Part Env-Ws1708. Few, if any, NOIs attempt to demonstrate (or even make mention of) compliance with New Hampshire's antidegradation rules. Rather, this important eligibility requirement has been largely ignored.

C. The General Permit Does Not Cover Discharges with Direct or Indirect Adverse Impacts on Essential Fish Habitat.

The General Permit states explicitly that it does not authorize discharges "whose direct or indirect impacts may adversely affect any Essential Fish Habitat."[27] A number of water bodies in New Hampshire have been designated Essential Fish Habitat ("EFH"). They include:

- the Great Bay estuary, which is EFH for Atlantic cod, Atlantic herring, Atlantic sea scallop, haddock, pollock, red hake, white hake, window-pane flounder, yellowtail flounder, Atlantic mackerel, and bluefish, in various life stages;

- the Cocheco River and all aquatic habitats in its watershed, including all tributaries to the extent they are currently or were historically accessible for salmon migration, for Atlantic salmon (in all of its life stages); and

- the Merrimack River, and all aquatic habitats in its watershed, including all tributaries to the extent they are currently or were historically accessible for salmon migration, for Atlantic salmon (in all of its life stages).[28]

Despite the fact that numerous New Hampshire Small-MS4s discharge into water bodies that are themselves designated EFH, or flow into EFH-designated waters, few NOIs submitted by New Hampshire entities address, let alone even mention, whether or to what extent their MS4 discharges will directly or indirectly affect Essential Fish Habitat. Unless and until this issue is

[26] N.H. Rule Env-Ws 1708.02.
[27] General Permit, Part I.B.2(f).
[28] http://www.nero.noaa.gov/hcd/efhtables.pdf

fully addressed, an NOI cannot satisfy this threshold eligibility requirement for coverage under the General Permit.

IV. The NOIs Generally Fail to Comply with Applicable Requirements that Small-MS4 Stormwater Management Programs Control the Discharge of Pollutants of Concern, Ensure No Instream Exceedance of Water Quality Standards, Reduce Stormwater Pollution to the Maximum Extent Practicable, and Protect Water Quality.

A. Water Quality-Impaired Waters and Controls for Pollutants of Concern

As discussed above, storm water management programs "must include a section describing how the program will control the discharge of . . . pollutants of concern and ensure that the discharges will not cause an instream exceedance of water quality standards."[29] Each NOI's discussion of this issue must "specifically identify control measures and BMPs that will collectively control the discharge of pollutants of concern."[30] An NOI must include a commitment to develop, implement and enforce a program that will "reduce the discharge of pollutants to the maximum extent practicable, protect water quality, and satisfy the water quality requirements of the Clean Water Act and state water quality standards."[31] These are critically important *minimum* requirements which, it appears, many NOIs from New Hampshire have failed to satisfy.[32]

As discussed above, many New Hampshire Small-MS4 owners have not updated their NOIs with critical information pertaining to New Hampshire's expanded 303(d) list of impaired waters. Moreover, it appears that the critical issues of specifically addressing controls for pollutants of concern, and ensuring that MS4 discharges will not cause or contribute to instream exceedances, have been largely ignored. Of equal concern is the fact that, apparently, the EPA itself has ignored Part I.C of the General Permit in its NOI reviews to date. Specifically, the administrative checklist used by EPA in its review of the NOIs describes Part D.7 of the NOI as pertaining solely to "TMDL implementation (if necessary)," making no mention of the analysis required under Part I.C of the General Permit relative to discharges to water-quality impaired waters.

It is imperative that submitters of NOIs satisfy the specific requirements of Part I.C of the General Permit, and that the EPA include this issue as an essential element of its review.

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[29] General Permit, Part I.C.2.
[30] *Id.*
[31] General Permit, Part III.A. *See also* 40 CFR § 122.34(a).
[32] *See* 40 CFR § 122.34(a).

B. Vague and Inadequate Stormwater Management Plans

It is essential that Small-MS4 owners prepare and implement detailed plans that will be effective in addressing the specific stormwater issues associated with their discharges and the condition of receiving water bodies. This requires base-line information which, as discussed above, has not been adequately developed in the NOIs submitted by many Small MS4 owners in New Hampshire. It also requires the identification of specific goals and strategies that should inform the BMPs in a coordinated manner. For example, identifying key commercial sectors in BMPs aimed at enhancing public knowledge of, and participation in, stormwater management issues can be an effective tool aimed at specific stormwater pollution concerns. EPA, in reviewing the NOIs, should ensure that the BMPs and measurable goals are sufficiently specific, and will work as part of a coordinated program to address the stormwater issues of particular concern in the subject municipality.

Some NOIs include as part of their stormwater management plan BMPs aimed at "developing," "preparing" or "reviewing" necessary regulations, as opposed to actually *adopting* such regulations. For example, BMP No. 9 in the Town of Derry's stormwater management plan, pertaining to illicit discharges, states: "Document Need or Prepare Ordinance." Derry's first Annual Report further states, with respect to BMP No. 9: "The Storm Ordinance being developed by the consultant will be presented to the Town Council for consideration for adoption." *See also* CLF's Comments on NOI Submission of Town of Greenland. It is essential that NOIs commit to the actual *adoption* and *enforcement* of new ordinances aimed at implementing those strategies. A commitment to simply review the need for, develop, investigate or propose new ordinances for adoption is inadequate. When a local ordinance is part of an NOI's stormwater management program, the actual *adoption* of such ordinance must be treated as a binding commitment.[33] Otherwise, local regulatory approaches that are merely studied and proposed but never *adopted* will achieve nothing, thereby undermining the overall effectiveness of the local stormwater management program, calling into question whether the program satisfies the legal requirements of the CWA, Phase II stormwater regulations, and the General Permit.[34]

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[33] The General Permit is explicit in its requirement that where adequate ordinances do not already exist to control construction-site and post-construction runoff, "development *and adoption* of an ordinance must be part of the program." *See* General Permit, Part III.B, subsections 4(a), 5(a) (emphasis added). The General Permit also repeatedly requires stormwater management programs to actually *implement* the minimum control measures. *See, e.g., id.*, Part III.A.

[34] *See*, for example, correspondence dated December 11, 2003 submitted to the EPA on behalf of Greenland, in which the following language was submitted as an addendum to the Town's NOI submission:

> ***BMP # GN3-001 Regulation to Prohibit Non-Storm Water Discharges into Storm Sewer System***
> The Town of Greenland will review existing regulations and ordinances for a mechanism that prohibits non-storm water discharges into the Town's storm sewer system. If the review indicates that no mechanism exists, an ordinance *will be proposed* which prohibits non-storm water discharges into the Town's storm sewer system.

C. Non-Structural, Smart Growth BMPs to Reduce Post-Construction Stormwater Impacts Associated with New Development and Redevelopment Projects

Non-structural BMPs that promote compact development with less impervious surface coverage,[35] and which recognize and protect sensitive aquatic resources, can be highly effective in reducing stormwater runoff and maintaining natural hydrologic conditions that allow for groundwater infiltration and recharge.[36] In recognition of this fact, the EPA has itself provided useful resources to assist Small-MS4 communities in developing non-structural, smart-growth strategies for managing post-construction stormwater associated with new development and redevelopment projects. For example, the EPA has developed a "menu" of strategies, which includes:

- Open space/conservation subdivisions, to promote more compact development with less impervious surface coverage by concentrating lots in appropriate places while preserving open space and natural areas elsewhere in the development;[37]
- Green parking techniques, to reduce impervious cover and storm water runoff;[38]

Measurable Goal: Existing ordinances will be reviewed in year 1 and 2. If no mechanism or an ineffective mechanism is found, an ordinance will be *proposed* in year 3 which will prohibit non-storm water discharges into Greenland's storm sewer system. The new ordinance will be targeted for adoption in year 3 or 4.

If Greenland's regulations and ordinances are reviewed and regulatory changes are "proposed" yet not actually adopted, this BMP will result in no protection of water quality, thereby undermining the effectiveness of the overall stormwater management program, including the program's ability to satisfy the "maximum extent practicable" standard and other legal requirements under the CWA, regulations, and General Permit.

[35] Reducing impervious surface coverage is critical because it is a significant cause of stormwater runoff into streams and lakes, and because the urbanization of river basins has a negative impact on the biological, physical, and chemical conditions of a stream. *See* Coles, James F., *et al.*, *The Effects of Urbanization on the Biological, Physical, and Chemical Characteristics of Coastal New England Streams,* U.S. Geological Survey Professional Paper 1695 (2004), *available at* http://water.usgs.gov/pubs/pp/pp1695/pp1695_report_new.pdf. As the EPA has recognized: "[T]he level of imperviousness in an area strongly correlates with the quality of the nearby receiving water." 64 Fed. Reg. 68,725 (Dec. 8, 1999). "Storm water and snow melt runoff wash over the impervious areas, picking up pollutants along the way while gaining speed and volume because of their inability to disperse and filer into the ground." *Id.* The result is runoff of greater volume, with more pollutants and higher temperature. Less impervious areas, with natural vegetation and soil, are able to filter runoff and reduce the amount of runoff volume, pollutants and temperature, reducing the negative impact on water quality.

[36] The Phase II regulations recommend that Small-MS4 communities choose BMPs designed not only to minimize water quality impacts, but also to "attempt to maintain pre-development runoff conditions." 40 C.F.R. § 122.34(b)(5)(iii).

[37] National Menu for Post-Construction Storm Water Management Best Management Practices for Stormwater Phase II available at http://cfpub.epa.gov/npdes/stormwater/menuofbmps/pdf/final/sec-5_new.pdf (hereinafter "Menu") at 115.

[38] Menu at 138-141.

- Narrow residential streets, to reduce impervious surface by 5 to 20 percent as compared to traditional subdivision roadways;[39]
- Alternative turnarounds, to replace or reduce the large impervious surfaces associated with traditional cul-de-sacs in residential subdivisions;[40]
- Alternative pavers, to replace asphalt or concrete in parking lots, driveways, and walkways as a way of promoting infiltration and reducing stormwater runoff;[41]
- Urban forestry, to manage stormwater in urban areas through conservation planning.[42]

Other critical tools include adequate buffers to protect aquatic resources; local wetlands protection ordinances; planning and zoning strategies that encourage development and redevelopment in appropriate growth areas; and the adoption of regulations requiring, or at least fostering, LID ("low-impact-development") techniques. EPA's Menu discusses the stormwater-runoff reduction benefits of zoning[43] and infrastructure planning[44] as means for municipalities to plan for and promote future development in a way that minimizes the impact of stormwater runoff.

In light of the importance and value of non-structural BMPs, the Phase II regulations specifically mandate that Small MS4s, in addressing post-construction stormwater management for new development and redevelopment projects, "must develop and implement strategies which include a combination of structural and/or non-structural [BMPs] appropriate for [the] community."[45] The regulations further mandate "[u]se of an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, Tribal or local law."[46] Regrettably, and despite EPA's guidance, few New Hampshire Small-MS4 owners have considered as part of their stormwater management plans non-structural BMPs designed to promote smart growth, reduce stormwater impacts from future new development, and increase groundwater recharge. This failure represents a troubling lost opportunity and is one that should be corrected to significantly enhance the effectiveness of the NOI and local stormwater management plan.[47] CLF strongly urges all Small-MS4 owners in New Hampshire to aggressively develop and implement local

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[39] Menu at 132-134.
[40] Menu at 142-144.
[41] Menu at 145-147.
[42] Menu at 120-122.
[43] Menu at 157-164.
[44] Menu at 128-131.
[45] 40 C.F.R. § 122.34(b)(5)(ii)(A).
[46] 40 C.F.R. § 122.34(b)(5)(ii)(B).
[47] Municipalities in New Hampshire have broad authority to adopt innovative land use controls to promote smart growth. *See* N.H. RSA 674:21. In fact, the New Hampshire's Legislature recently enacted legislation clarifying that municipalities can *require* innovative land use controls. House Bill 761 (2004 Session), codified at N.H. RSA 674:21, II. This means, for example, that New Hampshire municipalities are authorized to adopt regulations *requiring* all residential subdivisions to be clustered (i.e., designed as open-space conservation subdivisions). *Id.*

regulatory and other strategies that promote smart growth, LID, and other non-structural-BMP approaches to reducing impervious surface coverage and protecting aquatic resources.

V. The General Permit Program Must be Implemented in a Way that Ensures Compliance on an Ongoing Basis.

To demonstrate compliance with minimum control measures, Small-MS4 owners must meet the measurable goals identified in their NOI.[48] Accordingly, for each Small-MS4 owner granted authority by EPA to discharge under the General Permit (following a substantive review of the NOI and necessary enhancements thereto), the EPA must conduct a substantive review of the mandatory Annual Reports to ensure that the measurable goals specified in the NOI are in fact being implemented in a meaningful and timely manner, and that the program is achieving compliance with the Clean Water Act. To enable this substantive review, and to ensure compliance with water quality standards, the EPA should require a comprehensive monitoring program as part of each Small-MS4 owner's stormwater management plan.[49]

If, during EPA's review over the lifetime of the General Permit, it is determined that a Small-MS4 owner is making insufficient progress in achieving the "maximum extent practicable" standard, or that the subject stormwater management program will not ensure compliance with instream state water quality standards or fails to specifically identify control measures and BMPs that will control pollutants of concern, coverage under the General Permit must be revoked and subject to appropriate enforcement action taken by EPA, and the Small-MS4 owner must be required to substantially improve its NOI or apply for an individual permit.

VI. Conclusion

As a result of the *EDC* decision, the EPA must conduct a detailed, substantive review of each NOI and associated stormwater management plan to determine whether they will reduce stormwater pollution to the maximum extent practicable, and to determine whether they comply with the mandatory requirements of the CWA, the Phase II regulations, and the General Permit, as discussed above. We urge the EPA as an initial procedural matter to clarify that for each NOI submission, it will reach a new decision relative to whether the subject Small-MS4 is entitled to coverage under the General Permit. We further urge the EPA to notify each Small-MS4 owner, as well as CLF and the public, of how and when those new decisions will be rendered, including any additional opportunities for public involvement in the decision-making process.

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[48] Under 40 C.F.R. § 122.34, general permit holders are not required to meet measurable goals in their NOIs if EPA has not issued a menu of BMPs prior to the submission of the NOIs. In the present case, EPA issued BMPs before the General Permit was issued in April of 2003, so small MS4 holders are held to the measurable goals. General Permit, Part III.A.5.

[49] *See* 40 CFR § 122.34 (g)(1) ("The NPDES permitting authority may determine monitoring requirements for you . . .. Participation in a group monitoring program is encouraged.").

Beyond the above procedural matters, we urge the EPA to engage in a comprehensive, substantive review of each NOI, and to reject as inadequate any NOI that contains one or more of the deficiencies discussed above, including: any NOI that does not demonstrate that the subject discharges are eligible for coverage under the General Permit, and any NOI that fails to comply with the requirements of the CWA, Phase II regulations, and General Permit provisions by failing to include a stormwater management program that will: reduce stormwater pollution to the maximum extent practicable; protect water quality; ensure that the MS4 will not cause or contribute to instream exceedances of water quality standards; and specifically address BMPs and other measures to control pollutants of concern. We further urge EPA either to require Small-MS4 owners with deficient NOIs to substantially improve their NOIs to satisfy all the legal standards and requirements discussed above, or to apply for individual permits.

Again, CLF appreciates the opportunity to comment on the Small-MS4 program as it relates to regulated entities in New Hampshire. We would welcome the opportunity to work with the EPA and, resources permitting, Small-MS4 communities in New Hampshire to ensure that this program achieves its full potential in protecting the state's valuable water resources and fulfilling the requirements and ultimate goals of the Clean Water Act.

Respectfully submitted,

Thomas F. Irwin,
Staff Attorney

NEPONSET RIVER WATERSHED ASSOCIATION

490 Chapman Street, Suite One B • Canton, MA 02021
phone 781-575-0354 • fax 781-575-9971

December 17, 2004

Ms. Thelma Murphy
USEPA (CMA)
One Congress St.
Suite 1100, Boston, MA 02114

RE: ***Comments on the Dedham, MA Notice of Intent submitted for coverage under the General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems***

Dear Ms. Murphy:

The Neponset River Watershed Association (NepRWA) did not have sufficient time to fully review Dedham's Stormwater II NOI. However, we would like to offer the following analysis of relatively recent water quality data for certain Dedham stream segments, as well as recommendations as to what the town can do to identify causes and implement appropriate stormwater BMP's to deal with the problems that were found. In addition, we have some recommendations relative to Dedham's role in implementing the Neponset River Watershed Bacteria TMDL.

Available Water Quality Information for Mother Brook and Follow-up Information Needed to Identify Appropriate BMPs

NepRWA, through the efforts of its Citizen Water Monitoring Network (CWMN), has conducted detailed monitoring in Dedham and identified problems in Mother Brook. The results are reported in for "*Boston Harbor Watersheds Water Quality & Hydrologic Investigations*", Tab 3 (page 91), June 30, 2003, prepared by NepRWA for EOEA and the DEP Bureau of Resource Protection (available at http://www.neponset.org). We have included a disk containing this document for your convenience. The following are excerpted commentaries from that document. ***Dedham should give priority to the problems identified at, and the further information needed for, this site when implementing each category of BMP's discussed in Section D of its NOI.***

Mother Brook Subwatershed

DEP Segment Number: MA73-28

Cause of 303d listing: pathogens, nutrients, organic enrichment/low DO

Primary Problems: Fecal problems, sediment quality, habitat alteration

Background:

Mother Brook is a canal built in colonial times to divert water from the Charles into the Neponset. Our sampling location at Washington Street in Dedham (MOB001) has given us a picture of the water as it enters the Neponset Basin influenced primarily by water quality in the Charles River but also by runoff from the Dedham Mall. Relatively recently an additional station has been placed at the downstream end of Mother Brook at Reservation Road (MOB032) in Hyde Park. Land use in this subwatershed is a mixture of commercial, high density residential and industrial. Dumping is also a significant concern for Mother Brook as is the hydrologic impact of the operation of the diversion from the Charles River.

Water Quality Discussion:

Bacterial violations are frequent at both upstream and downstream stations with 40% and 50% of samples violating respectively, and a roughly equal distribution between dry and wet weather problems. These results are consistent with the presence of illicit connections and SSOs. Nutrient levels in Mother Brook are some of the worst in the watershed, arguably even worse that the problems in Meadow Brook, with 21%, 29%, 66%, 79% and 8% of N+N, ammonia, total nitrogen, orthophosphate and total phosphate samples violating respectively. Mother Brook is unusual in that all nutrient sub-parameters are consistently high, including ammonia. Nutrients are high during both wet and dry weather. Because there are know sewage problems on Mother Brook, nutrient samples are not collected at the downstream station. Physical parameters are generally within acceptable ranges except for conductivity which sees frequent exceedances.

Action Recommendations:

- Dry weather, outfall sampling for bacteria and surfactants should be conducted throughout this reach.
- Several rounds of dry weather, in-stream, bacteria sampling should be conducted to help target potential sources.
- Enforcement measures must be taken against widespread illegal dumping by abutting homeowners.
- An assessment should be made of the potential for retrofitting existing storm drainage infrastructure with end of pipe structural BMPs to reduce bacterial and

nutrient loading. Ample public land is available along much of this reach for such a purpose and the smaller watershed size makes structural BMPs more feasible here than on the Lower Mainstem.

Information sources: 303d list, DEP 1995, NepRWA 1998, NepRWA 1999, NepRWA 2001, NepRWA Field Reconnaissance, NepRWA 2003

BMP's for meeting Bacteria TMDL

Dedham has the responsibility to carry out a number of stormwater-related activities pursuant to the "TMDL of Bacteria for the Neponset River Basin"[1] - see Table 15 of that TMDL (attached) listing the responsibilities of "Neponset River Basin Communities" and "Responsible Communities." Thus Dedham is responsible for ensuring that water discharged from its MS4's meets state Water Quality Standards for bacteria and its Stormwater NOI should give top priority to all BMP's that are necessary to meet that responsibility. Bacteria BMP's should target those streams with bacteria problems identified above.

NepRWA appreciates the opportunity to comment on this NOI and stands ready to use its resources to help where it can in implementing the many important measures needed to remedy longstanding stormwater-related problems in the Neponset River Watershed.

Sincerely yours,

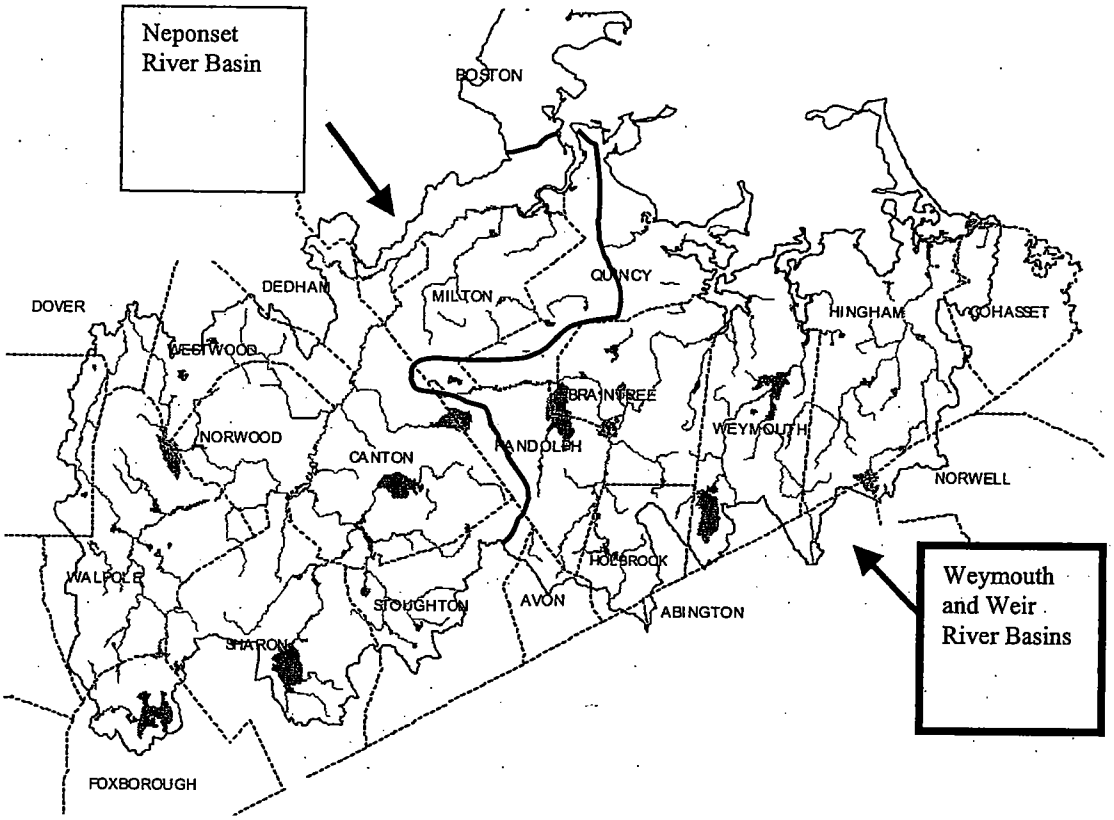
Steven Pearlman
Water Resource Analyst

cc: William G. Keegan Jr., Dedham Town Administraor
Dave Ferris, DEP/NERO
Linda Domizio, DEP Worcester

stormwaternoi.dedham.doc

[1] Available from Massachusetts DEP Division of Watershed Management – Watershed Planning Program

Total Maximum Daily Loads of Bacteria for Neponset River Basin



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
BOB DURAND, SECRETARY
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
LAUREN A. LISS, COMMISSIONER
BUREAU OF RESOURCE PROTECTION
CYNTHIA GILES, ASSISTANT COMMISSIONER
DIVISION OF WATERSHED MANAGEMENT
GLENN HAAS, DIRECTOR

Table 15: Tasks And Responsibilities

Task	Responsible Group
Writing TMDL	DEP/EPA
TMDL Public Meeting	DEP/Watershed Team
Response to public comments	DEP/EPA
Organization, contacts with volunteer groups	EOEA Watershed Team
Development of comprehensive storm water management programs including identification and implementation of BMPs	Neponset River Basin Communities
Illicit Discharge Detection and Elimination	Neponset River Basin Communities with NepRWA assistance
Leaking Sewer Pipes and Sanitary Sewer Overflows	Responsible Communities
Inspection and upgrade of on site sewage disposal systems as needed	Homeowners and Neponset River Basin Communities
Organize implementation, work with stakeholders and local officials to identify remedial measures and potential funding sources	EOEA Watershed Team, NepRWA, and Neponset River Basin Communities
Organize and implement education and outreach program	NepRWA and Neponset River Basin Communities
Write grant and loan funding proposals	NEPRWA, Neponset River Basin Communities and Planning Agencies with guidance from DEP
Inclusion of TMDL recommendations in EOEA Watershed Action Plan	EOEA Watershed Team
Surface Water Monitoring	NepRWA and DEP
Provide periodic status reports on implementation of remedial activities	EOEA Watershed Team and NepRWA

CHARLES RIVER
conservancy

ONE EDUCATION STREET
CAMBRIDGE MASSACHUSETTS
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617 619 2856 f

crc@charlesriverconservancy.org
www.charlesriverconservancy.org

Thelma Murphy
Office of Ecosystem Protection
U. S. EPA, CIP
One Congress Street - Suite 1100
Boston, Massachusetts 02114

February 17, 2005

Dear Ms. Murphy,

We are writing to you as advocates of the parklands; making the Charles River parklands more attractive and active. The water quality also plays a key role in this effort, since re-introducing swimming in the Charles is one of our goals. As you are well aware, in 1995 John deVillars set the goal for a swimmable Charles by 2005.

Stormwater runoff is one of the final obstacles to be cleared as we move towards a swimmable Charles River. Polluted stormwater prevents communities along the river from fully taking advantage of the recreational opportunities the river has to offer.

These towns and DCR have a responsibility to their residents and the residents of the watershed to do all that they can to prevent polluted stormwater from reaching our waterways. I urge EPA to conduct a thorough and substantive review of the nine lower basin communities' and the Department of Conservation and Recreation's (DCR) stormwater management programs to ensure compliance with state and federal clean water laws. It is only through full compliance with these laws that we can achieve the goal of a truly clean Charles.

The Charles River Conservancy, in collaboration with other local clean water and swimming advocacy groups and agencies, is working to return swimming to the Charles River. A review of the nine lower basin communities' and the DCR's stormwater management programs will help us make the vision of swimming in the Charles River a reality. Community members deserve the opportunity to head to the river for a mid-afternoon swim on a hot summer day. Recreational opportunities should not stop at the river's edge. Please help us make the Charles River a cleaner river – a river that can fulfill its potential as both a healthy waterway and a recreational haven for community members.

Thank you for the opportunity to comment on this important issue.

Sincerely,

Renata von Tscharner

Renata von Tscharner
President

Blackstone Headwaters Coalition

PO Box 70688
Quinsig Village
Worcester, MA 01607

December 17, 2004

Thelma Murphy
U.S. EPA
Water Tech Unit
P.O. Box 8127
Boston, MA 02114

2005 DEC 20 P 7:56

Dear Ms. Murphy,

Please accept the following general points of review of the Stormwater Phase II permitting Program as seen from the perspective of a non-profit organization working to make the Blackstone River Fishable and Swimmable by 2015.

After reviewing the files at MA DEP which contain the original Notices of Intent and the update reports from Year 1 from the twelve Towns in the Massachusetts portion of the Blackstone, I note that two towns, Millville & Upton have failed to submit their year 1 reports.

My principle critique of the program to date is its lack of specificity, both in its initial conception of what is required for minimum standards as well as follow-up review and enforcement. Perhaps, I expected too much after my experience with the City of Worcester in Phase I of the Stormwater permit, but I am struck by the varying levels of effort proposed by the Towns. I understand that this program is seen as another "unfunded mandate" coming down from the Feds, but that is why it is even more important to be clear with what is expected from the regulated community. Specifically, in regards to mapping the outfalls, this seems to me to be the first required step without which an effective program can not be developed. The towns need to first know what they have , and where it is located before they can plan strategies to improve the system. Most towns have given themselves five years to come up with the map, and several have made it contingent upon funding from town meeting.

My second critique is the need for follow-up; a law should not be on the books unless it will be enforced. Many towns hired consultants to develop the NOI's but lack the capacity to follow through on what was proposed. The program has been successful in creating awareness of the issue of Stormwater and its effects on streams, but we need to build on this new-found awareness and create capacity at the local level. That is why I am dismayed that,

evidently, Towns are not eligible to apply for 319 funding to pay for improvements in their regulated outfalls. I understand the technicality that it is specifically that work, which in an ideal world, would come under what is required under the permit, but the regulated MS4 outfalls are exactly where we need to fund demonstration projects and begin to show some improvements to encourage those towns willing to try new methods.

I understand the lack of staffing to review and the lack of funding to support stricter standards, but we should not handcuff the efforts of those towns willing to stretch themselves and their limited capacities in order to achieve the stated aims of the Clean Water Act. Hopefully, many more streams and rivers can become Fishable & Swimmable in our lifetime!

Sincerely,

Peter G. Coffin
BHC Coordinator

cc: Linda Domizio, MA DEP

COMMONWEALTH OF MASSACHUSETTS

MASSACHUSETTS SENATE

STATE HOUSE, BOSTON 02133-1053

SENATOR JARRETT T. BARRIOS
MIDDLESEX, SUFFOLK & ESSEX DISTRICT
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COMMITTEES:
PUBLIC SAFETY (CHAIR)
HEALTH CARE (VICE CHAIR)
HUMAN SERVICES
THIRD READING

February 17, 2005

Thelma Murphy
Office of Ecosystem Protection
U.S. EPA
CIP One Congress Street, Suite 1100
Boston, MA.02114
murphy.thelma@epamail.epa.gov

RE: Public Hearing on Storm Water Discharges into the Lower Charles River.

Dear Ms. Murphy,

I am writing to urge you to continue the progress Massachusetts has made in enhancing the quality of life and environmental health in the Charles River basin.

As you are well aware, the Charles River has a long history of pollution, and the combined efforts of legislative actions, the installation of warning systems, the pre-treatment efforts of some communities, and the restoration programs established by the Charles River Watershed Association (CRWA) and others, have in recent years resulted in significant reductions in pollutants from the previously high levels. However, stormwater discharges continue to be one of the last great hurdles before we achieve a healthy Charles River, and it will take the complete commitment of all our watershed's towns, the Department of Conservation and Recreation (DCR), Department of Environmental Protection and the Environmental Protection Agency (EPA) to address the problem.

To continue that progress it is vital that the stormwater management plans currently being reviewed by EPA comply directly with the law and effectively address pollution reduction and sustainable water use. I urge EPA to do a thorough and substantive review of all the nine lower basin communities' stormwater management programs as well as that of DCR to ensure compliance with state and federal clean water laws.

Specifically, I agree with CRWA and the Conservation Law Foundation that EPA must:

- Issue new decisions about DCR's Notices of Intent (NOI's) based on the comments received during the public comment period, and notify the public of their decision;
- Reject DCR's NOI's as inadequate under the requirements of both state and federal law;

- Require DCR to submit complete NOI's, including the required Annual Reports, and demonstrate a financial and institutional commitment to meeting the requirements of the Clean Water Act;
- Establish a schedule for DCR to meet its requirements.

The EPA plays a vital role in protecting the health of our air, water and land. To that end, it is essential that the Agency undergo a full review and assessment of the stormwater management plans being considered. I am

Sincerely yours,

Jarrett Barrios
STATE SENATOR

COMMONWEALTH OF MASSACHUSETTS
MASSACHUSETTS SENATE
STATE HOUSE, BOSTON 02133

JARRETT T. BARRIOS
STATE SENATOR
Middlesex, Suffolk and Essex District

COMMITTEES:
Public Safety & Homeland Security (Chair)
Consumer Protection & Professional Licensure

February 17, 2005

Thelma Murphy
Office of Ecosystem Protection
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Boston, MA.02114
murphy.thelma@epamail.epa.gov

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The EPA plays a vital role in protecting the health of our air, water and land. To that end, it is essential that the Agency undergo a full review and assessment of the stormwater management plans being considered. I am

Sincerely yours,

Jarrett Barrios
STATE SENATOR

February 17, 2005

Thelma Murphy
Office of Ecosystem Protection
U.S. EPA, CIP
One Congress Street – Suite 1100
Boston, Massachusetts 02114

Dear Ms Murphy:

Stormwater runoff is one of the last great hurdles to be cleared as we move towards a fishable and swimmable Charles River. Polluted storm water affects the flora and fauna of the Charles, and prevents communities along the river from fully taking advantage of the recreational opportunities the river has to offer. In fact, certain areas of the Charles have been designated by our state as "impaired" by pollutants, including nutrients, metals, pathogens, oil and grease and priority organic pollutants. Stormwater is the main source of these pollutants.

These towns and DCR have a responsibility to their residents and the residents of the watershed to do all that they can to prevent polluted stormwater from reaching our waterways. *I urge EPA to conduct a thorough and substantive review of the nine lower basin communities' and the Department of Conservation and Recreation's (DCR) stormwater management programs to ensure compliance with state and federal clean water laws.* It is only through full compliance with these laws that we can achieve the goal of a truly clean Charles.

As a nine year member of the Charles River Watershed Association (CRWA) IM3 monitoring program of 80 volunteers covering 37 sites, it is evident that stormwater management is critical to the successful attainment of a reliable water supply and a "clean Charles".

Coincidentally, as a current director on the CRWA Board and former long-time Chair of the Needham Board of Appeals, I am dedicated to a pro-active role in addressing the orderly growth of the 308 square miles comprising the Charles River Watershed. My envisioned regional plan, involving the upper group of the 35 watershed communities, will encompass the principles of smart growth with high density mixed use centers coupled with strict environmental zoning. "Transit Oriented Development" will center around the restoration of rail from Millis, through Medfield and Dover into Needham, all of which is the subject of a co-sponsored bill by Representative David P. Linsky and State Senator Scott Brown.

Thank you for the opportunity to comment on this important issue.

Sincerely,

William J. Tedoldi, Esquire
68 High Street
Needham, MA 02494
781-444-8278
wjtedoldi@rcn.com

Needham

"Susan W. Abbott"
<sswabbott@rcn.com>
02/18/2005 12:19 AM

To Thelma Murphy/R1/USEPA/US@EPA
cc Elizabeth Handler <shandler@gis.net>
bcc
Subject Storm water hearings 2/1505

Dear Thelma,

I am not sure how hearings really work, as far as the information you want or need from those who come to testify, but because you have none of the papers I referred to as I spoke, I am sending our latest to you as an attachment. The lawn care professional letter was sent to 24 companies who advertised in our local phone book and/or in the Verizon phone book. We are presently doing follow-up calls: to ask if they have any questions; to inquire if any employees took organic classes; to ask how employees are trained to keep toxics out of the soil, and to ask if they offer organic care to all their customers.

For 3 years, the Pesticide Alert I referred to has been passed out at town fairs, the Needham Garden Center, the library, and all Needham League of Women Voters meetings.

Our major goal is to have water that falls on Needham remain in Needham to replenish this area's water supplies and that the water that goes into the ground be unpolluted by toxics. (We are a town that depends on three wells for its water.) Thus, we ask that the EPA be proactive in its regulations to capture water and replace it in the ground as close to the way nature intended it to happen. It would be helpful if the EPA would require that new and remodeled residential properties be required to capture some percentage of the roof runoff and then by some dry well system or drain get it into the ground.

Thank you for the opportunity to participate in the hearing.

Sincerely,
Susan W. Abbott
Natural Resources Chair
League of Women Voters Needham

BOH Lawn care professional letter 12 04.doc

Needham Board of Health

To Lawn Care Professionals working in Needham: December 2004

The Board of Health would like to update you on Needham's efforts to reduce the use of lawn care chemicals on town-owned land. We would also like to bring to your attention a number of resources and educational programs on Integrated Pest Management (IPM) and organic land care. As more people become concerned about the health effects of pesticides, we foresee a growing demand for an alternative to chemical-intensive lawn care service. We ask you to consider expanding your knowledge about IPM and organic lawn care and offering these options to your clients.

In addition to a summary of town initiatives, we have enclosed information about a certification course in organic land care, and an upcoming series of roundtable programs on Ecological Landscaping.

Recent History of Needham lawn care:

In our **Pesticide Alert letter** (enclosed), we informed our citizens that their lawns may be the greatest source of their exposure to pesticides. The alert was sent to each household in a tax bill and has been available spring and fall at various businesses and at the library. We intend to continue educating our citizens about their use of pesticides and the impact pesticides may have on their health and on our water resources.

Town Commons: Needham is in its third year of organically maintaining the town hall common and the Heights common, thanks to the generosity of Hartney Greymont Inc. and Soil Solutions.

Needham IPM Policy: Needham also has developed an Integrated Pest Management (IPM) policy for all town buildings, parks, and fields. According to this policy, organic and other means are used to control pests and weeds; only if these means are ineffective can the smallest amount of the least toxic pesticide be used.

School Policy: The state law, informally called The Children and Family Protection Act, states that no pesticides may be used on school property unless formal requests are filed and warnings posted at school and notices are sent to abutters.

Thank you for taking the time to review this material. Through our joint efforts, we can work towards ensuring a healthier environment for lawn care workers, for our children, our pets, and our air, soil, and water... for us all.

If you have any questions, or if you know of other educational programs, please phone our lawn care volunteer at 781-444-8275 or FAX 781-559-8285 with your suggestions.

Sincerely,

Board of Health

LWV volunteers

TOWN OF NEEDHAM, MASSACHUSETTS
PUBLIC WORKS DEPARTMENT

470 Dedham Ave., Needham, MA 02492
Telephone: (781) 455-7534 Fax: (781) 449-9023

RICHARD P. MERSON
Director

Lance M. Remsen
Parks & Forestry Supt.

Rhainhardt F. Hoyland
Highway Supt.

Robert A. Lewis
Water & Sewer Supt.

Anthony L. Del Gaizo, P.E.
Town Engineer

Charles J. Laffey
Solid Waste & Recycling Supt.

Steven J. Hawes
Garage & Equip. Supv.

February 17, 2005

Ms. Thelma Murphy
Office of Ecosystem Protection
U.S. EPA, CIP
One Congress Street – Suite 1100
Boston, MA 02114

Dear Ms. Murphy:

Thank you for the opportunity to participate by attending the public hearing held Tuesday, February 15, 2005, regarding Notice of Intent filing for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4's) for National Pollution Discharge Elimination System (NPDES) for General Permit Coverage. My staff and I were encouraged to see such a large turnout as occurred for this matter. This turnout indicates the continued interest in the environment at the local level. I was also pleasantly surprised to hear the testimony of Susan Abbott, a Needham resident and member of the Needham League of Women Voters Water Resources Committee. I was not aware that she was planning to attend.

Significant progress is evident toward the Clean Charles 2005 Task Force goal of a fishable, swimmable Charles River by the year 2005. I believe as the lower Charles River MS4 communities programs get into full gear, the grade level rating for the river will move off of Grade B level where it has been for the past few years. I believe the efforts of the EPA and the communities acting through the previously issued Memorandums of Understanding (MOU) and Memorandums of Agreement (MOA) was the driving force for the improvement from Grade D to Grade B during the late 1990's. It is also important to acknowledge that the Charles River Watershed Association (CRWA) now along with the Conservation Law Foundation (CLF) the perennial river advocates, continue to keep a close watch as the task force 2005 process evolves into the NPPES Storm Water Phase II program. The awareness that this oversight is apparent should cause all parties to sustain their efforts through the term of these permits.

On a few occasions, presenters referenced that the concept of a more universal or geographically-based approach be taken by EPA whereby all or a number of the MS4's be subject to a single or an identical solution for the six main "minimum Control Measures" as opposed to each MS4 developing their own unique solution under the General Permit. I would strongly recommend that this not be adopted. Although this appears, on the surface, to be a logical watershed-based approach, in fact it is quite difficult to implement.

Within the run of the Charles River subject to the hearing, the river flows through nine communities, three with city forms of government, six with Town forms of government and along a significant amount of shoreline property controlled by State government. A uniform set of rules, regulations, maintenance practices and such are, unfortunately, nearly impossible to apply or implement uniformly. Furthermore, what may be very successful in one community's form of government may be completely unworkable in another..

I was encouraged to hear testimony by CRWA and CLF in support of or the lauding of individual community efforts demonstrating success with certain of the control measures. I would encourage and support the greater sharing of means and methods between communities to ensure the success of all the communities in this effort to effect a true community-based watershed solution. I believe the EPA, through an effort to carry beyond the Clean Charles River 2005 Task Force, will be more effective over time.

Sincerely,

Richard P. Merson, Director
Department of Public Works

cc: Board of Selectmen
K. Fitzpatrick, Town Administrator
R. Lewis, Superintendent, Water & ~~Supper~~ Sewer
A. Del Gaizo, Town Engineer

rpm.ms4permit.d

Bill Millett
<billm@ci.wellesley.ma.us>

02/15/2005 03:42 PM

Please respond to [redacted]

To Thelma Murphy/R1/USEPA/US@EPA

cc Steve Fader <Stevef@ci.wellesley.ma.us>

bcc

Subject Public Comment for NPDES Phase II NOI'S hearing

I would like to reiterate my comment made at the public hearing today. I am opposed to requiring the Towns to change their NOI's or obtain coverage under a new geographical general permit at this time. The EPA was late in issuing its general permit in 2003. We were required to begin implementing our SWPP plans at that time. As of the date of this hearing we are nearing the end of year two of a five year plan. Any required changes should be implemented for the next five year cycle.

Thank you for the opportunity to comment on this mattter.

William D. Millett
Senior Civil Engineer
Town of Wellesley Engineering Division

Roger Frymire
<rramjet@verizon.net>
02/17/2005 09:04 PM

To Thelma Murphy/R1/USEPA/US@EPA
cc David Webster/R1/USEPA/US@EPA, Davidj Gray/R1/USEPA/US@EPA
bcc
Subject NPDES II 11th hour comments

Thelma -

I'm glad I finally got to meet you last Tuesday. I find that there are a few more comments I would like to get on the record.

I avidly read many of the town NOIs which were posted on the EPA website. I hope these will remain available as reference material for the duration of the permit term.
However, I never found the NOI for Somerville posted - and while I requested thru Dave Gray that NOIs for state agencies be posted - specifically MassHiway, MassPike, MassPort, and DCR - these never were. In fact I was under the impression that DCR had not even filed an NOI until I saw it in the handouts at the hearing. Had I seen it earlier, Likely I would have commented as CRWA did on its many glaring deficiencies. From my experience it will take a LARGE hammer to get DCR's attention, much less action on this topic of stormwater. I hope EPA will use every tool in your arsenal to get DCR moving.

Please post ALL these NOIs for online reference.

Annual reports online would also be GREATLY appreciated.

I ask that the general permit be modified to require permittees to send advance notice of all public participatory meetings to watershed associations for the watersheds in which they lie. Watersheds could then post these online and even send out e-mail reminders so interested parties might be able to attend meetings in each area where they have knowledge or interest. I cannot track all the permittees of interest frequently enough to catch fleeting notice of such meetings, but would be HIGHLY interested in attending some of them.

I ask that both MIT and Harvard be required to enroll under NPDES II. MIT already holds a NPDES permit for several of it's river intakes and outfalls. Harvard now owns the Allston Railyards as well as the Blackstone power plant with NPDES permits, and requiring additional stormwater documentation from entities already holding industrial permits seems logical - considering the very large land holdings of both these entities along the Charles River. I have personally witnessed questionable plumes emanating from outfalls controlled by each of these schools, and while MIT has been forthcoming with stormwater maps and in assisting me to find causes for some of their problems - Harvard has flatly refused to even let me look at any stormwater mapping.

All my comments at the hearing were on the DCR's deplorable operations, maintenance, and structural state of its stormwater infrastructure; but I left out a few points I had intended to make.

DCR has vegetation management plans for the riverbank which were required by Boston and Cambridge Conservation Commissions. These plans were required because DCR practices here were greatly increasing erosion of the riverbank, depositing large mats of cut vegetation into the

river, and exacerbating the amount of trash blowing and washing into the Charles River. BOTH these Con Coms have had to issue Notice of Violation to the DCR for repeated egregious violation of the Orders Of Conditions imposed on these DCR plans. DCR response in each instance is greatly lacking.

Not a rainstorm can pass without the news carrying items noting flooding of DCR parkways. Besides the Full catchbasins and collapsed/plugged drain lines I mentioned at the hearing, many outfall headwalls along the river bank have collapsed into the river, and in many places multiple sections of drain have succesively eroded away and collapsed into the river - leading to large erosional gullies encroaching into parkland.

Simple street sweeping seems to be beyond DCR's capability. One section of road is of particular interest to me - Cambridge Parkway between the Longfellow Bridge and Science Museum. When the Cambridge Galleria was built, the use of Federal UDAG monies required that neighborhood fears be addressed of being cut off from the renovated riverfront parks here by the large traffic volumes on Land Blvd .
This was done by requiring weekday morning parking restrictions on Cambridge Parkway along the river from 7-10am so this would not all be absorbed by commuter parking, but instead be available for local park users. While the signs were posted, this has never been enforced. Besides the UDAG violation, full-time parking here guarantees that street sweeping cannot occur - leading to excess TSS washed into the river.

Thank you for the opportunity to comment on these permits.

Sincerely,
Roger Frymire
22 Fairmont Avenue
Cambridge 02139-4423
617-492-0180
ramjet@alum.mit.edu

Received
2-15-05

[illegible] Powell
25 South [illegible] St. [illegible]
Dorchester, Mass
02124

Thelma Murphy
Office of Ecosystem Protection
U.S. EPA, Co P
One Congress Street - Suite 1100
Boston, Mass. 02114
Feb. 15, 2005

Dear Ms. Murphy:

My name is [illegible] Powell. I am a student at John D. O'Bryant School of Mathematics & Science High School. Yesterday my biology teacher Ms. Pierson was talking about water pollution. Alot of stories came of the Charles River. One story that inspired me to write the letter is about my fellow peer taking a trip to Charles River and saw feces in the water. I know that the Charles River is a real important source of water.

My reason for writing this letter is to tell you that the Charles River is filthy. My proposal is that the water should be cleaned. Charles River is a place ~~wh~~ where people swim and fish. We can't have an important known place that is a possible potential for fun be abused ~~of its~~ and disgraced of its beautiful nature.

Received
2-15-05

February 14 05
Thelma Murphy
Comments

Dear Thelma Murphy,

We have a long time to even reach the lowest level of potable water, let alone a swimmable. I would be amazed if even a single life were to manage to survive in the murky polluted waters. The stormwater that are dumped into the Charles comprise of filthy and sometime hazardous materials. And I feel extremely dismayed that the Charles is slowly slipping away from our grasp. I thankyou for your concern in the conservation of our beautiful city

Yours respectfully,
Anthony [illegible]
Grade 9
37 Hefferan Street,
Allston

Received
2-15-05

2/15/05
Thelma Murphy
Office of Ecosystem Protection
U.S. EPA, CIP
One Congress Strt - Suite 1100
Boston, Mass 02114

Dear Ms Murphy,
I'm a student of Boston Pubic Schaol and have visited the Charles River. When I saw the pollution in the River I was ~~suprise~~ ashamed of the city. I think its time that your Company steps up to clean pollution, so that we could have a fishable and Swimmable River. I believe that if the River isn't cleaned anytime soon Bostons water system will be destroyed. I think that ~~the~~ if ~~we~~ your Company could work hard and prevent storm water pollution from the Charles River, it has a chance of being clean.

Sincerely
Jay Okafor
47 Bickford, Jamaica Plain
Boston Mass 02130
Grade: 9

Received
2-15-05

Thelma Murphy
Office of Ecosystem Protection
U.S. EPA, CIP
One Congress Street - Suite 1100
Boston, Massachusetts 02114
February 15, 2005

Dear Ms. Murphy,

I'm writing this letter to inform you of the current condition of the Charles River. As you might have guessed the Charles River is extremely dirty. The condition of the Charles River is caused by the amount of dirty storm water running into storm drains. Storm sewer operators are supposed to be legally required to make sure in their plans that storm water discharges don't effect water quality. But that obviously isn't working. The filthy Charles River is also caused by the amount of impervious sefaces in Boston, Massachusetts. I believe that if we had more pervious surfaces in Boston then the amount of dirt and junk in the Charles River would decrease. I hope you take my suggestion in mind and I hope that one day the Charles River would be clean enough for people to swim in it. Thank you for taking your time to read this.

A concerned student,
Tatiana Johnson
Grade 9

40 Magdala St
Dorchester, MA 02124

Received
2-15-05

February 15, 2005

Thelma Murphy
Office of Ecosystem Protection
One Congress St. - Suite 1100
Boston, Massachusetts 02114

Dear Mrs. Murphy,

As you may know polluted storm water effects the Charles River. I think you should do your best to keep the Charles River clean. The Charles river is important and should be cleaned and kept cleaned. Maybe you can hire ex cons to clean the river, maybe they'd even volunteer. OR you can get volunteers to help, cause, the Charles River is everyone's river.

Thank you for your time!

Sincerly,
Anonamous
Malcolm X Blvd
Roxbury Mass 02119

Received
2-15-05

Feb. 15th 2005

Dear Ms. Murphy:

The Charles River needs to be cleaned up. It is Dirty. You should go clean it up. It will help the enviroment a lot. Also, you should turn the river into something like a thing where people pay to do something.

Thank you for the opportunity to comment on this issue

Sincerely,

Robert Lee

55 Murdock St
Brighton, Ma 02135

617-782-2428

Received
2-15-05

Thelma Murphy
Office of Ecosystem Protection
U.S. EPA, CIP
One Congress Street - Suite 1100
Boston, Massachusetts 02114
February 15, 2005

Dear Ms. Murphy,

I think we should stop stormwater runoff so the Charles River can be cleaned. If we do this we can have a fishable and swimmable Charles River.

Sincerly
Orthelande Merisier
Boston
John D. O'bryant School Grade 08

February 15, 2005

Ms. Thelma Murphy
U.S. Environmental Protection Agency (CMA)
One Congress Street, Suite 1100
Boston, MA 02114

Re: **Small-MS4 Notice-of-Intent Submissions for Brookline, Cambridge, Dedham, Needham, Newton, Waltham, Watertown, Wellesley and Weston**

Dear Ms. Murphy:

The Conservation Law Foundation ("CLF") and the Charles River Watershed Association ("CRWA") appreciate the opportunity to comment on the Notice of Intents ("NOIs") and Annual Reports submitted by Brookline, Cambridge, Dedham, Needham, Newton, Waltham, Watertown, Wellesley and Weston (collectively, "the lower basin communities") seeking coverage under the Environmental Protection Agency's ("EPA") National Pollutant Discharge Elimination System (NPDES) General Permit ("General Permit") for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems ("Small MS4s"). We appreciate EPA's willingness to hold a public hearing and to extend the public comment period in order to promote public participation in this important area.

Founded in 1966, CLF works to solve the problems threatening our natural resources and communities in Massachusetts and throughout New England. CLF works to promote effective regulations and strategies to reduce and minimize the significant impacts of stormwater pollution. CRWA is the nation's leading research and advocacy watershed organization, using science, law, and advocacy to protect and restore the Charles River and its watershed. For the past decade, CRWA has tracked pollution to the river from polluted stormwater and has focused on technical and policy issues related to stormwater management.

CLF and CRWA have reviewed the NOIs and the annual reports of the lower basin communities, and are providing the EPA with the following detailed comments in order to assist your review. In summary,

- EPA is required to review each NOI substantively to ensure compliance with state and federal law following the close of the public comment period;

Charles River Watershed Association, 48 Woerd Avenue, Waltham, 02453
T: (781) 788-0007, F: (781) 788-0057, Website: www.charlesriver.org, Email: crwa@crwa.org

Conservation Law Foundation, 62 Summer Street, Boston, Massachusetts 02110-1016
Phone: 617-350-0990 • Fax: 617-350-4030 • www.clf.org

- The substantive review must consider whether the lower basin communities' stormwater management program ("SWMP") meet the requirements of state and federal law, including specifically addressing pollutants of concern, ensuring compliance with the anti-degradation policy, and ensuring that stormwater discharges do not contribute to violations of water quality standards;
- As the lower basin communities discharge into impaired waterbodies, and are urbanized communities, they should be required to implement structural and non-structural best management practices (BMPs) that have been shown to be effective for urbanized communities in this region; and,
- EPA should consider issuing a geographically-based NPDES permit for the lower basin communities that requires synergistic and coordinated BMPs and measurable goals for the nine communities.

Attached to this letter are detailed reviews of each community's NOI and annual reports. While many of the communities have designed and implemented commendable stormwater management programs, further review and amendment of the NOIs is necessary in order to fully comply with the requirements of the Phase II program.

Background

It is widely acknowledged that stormwater runoff "is one of the most significant sources of water pollution in the nation, at times comparable to, if not greater than, contamination from industrial and sewage sources."[1] Stormwater runoff is the most significant source of pollution to the Charles River watershed, causing degradation of water quality which in turn affects fisheries, habitat, aquatic flora, recreational uses, and the aesthetic beauty of the watershed.

Long-term water quality monitoring conducted during or immediately after storm events in the lower basin of the Charles River by CRWA and others demonstrates that water quality in the river suffers from illicit connections and pollutant-laden stormwater runoff. Carried either over land or through pipes to the river and its tributaries, stormwater causes widespread violations of the Massachusetts Surface Water Quality Standards ("WQS").

Communities in the lower Charles River watershed, which are among the most densely populated in Massachusetts, contribute significant stormwater pollution in the Charles River watershed. In addition to causing stormwater pollution, dense development significantly reduces infiltration and groundwater recharge, resulting in reduced baseflow to the river and its tributaries. Baseflows are further reduced by intensive sewering in the region, as well as water supply withdrawals in the upstream communities. Reduced baseflow further limits the assimilative capacity of the river, and exacerbates stormwater pollution problems.

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[1] *Environmental Defense Center v. EPA*, 344 F.3d 832, 840 (9th Cir. 2003), *cert. denied*, 124 S.Ct. 2811 (2004), citing Richard G. Cohn-Lee and Diane M. Cameron, *Urban Stormwater Runoff Contamination of the Chesapeake Bay: Sources and Mitigation*, The Environmental Professional, Vol. 14, p. 10 (1992); *see also Natural Resources Defense Council, Inc. v. United States EPA*, 966 F.2d 1292, 1295 (9th Cir. 1992) (citing a study by the Nationwide Urban Runoff Program).

We are aware of the significant efforts that have been made by the lower basin communities as well as federal and state agencies to address stormwater pollution in the lower Charles River basin in an effort to clean the Charles River by Earth Day 2005, and commend those communities and agencies on their progress. However, despite these efforts, stormwater pollution continues to contribute to violations of the water quality standards. This is a collective problem that requires a concerted solution by the individual cities and towns. We believe that the nine communities can and should share their expertise to ensure that they are meeting the six minimum control measures fully, but also to implement the most effective strategies to achieve water quality improvements. The Small MS4 Program provides an opportunity to evaluate the progress that has been made to date by the lower basin communities, identify areas where further pollution reduction is necessary, and implement actions for accomplishing this task.

We believe that implementation of the Small MS4 regulations to the fullest extent is critical to protecting and restoring valuable surface water resources from the proven adverse impacts of stormwater runoff.[2] The Small MS4 regulations have the potential to achieve significant gains at the local level that are critical to the achievement of the goals of the Clean Water Act ("CWA").

Analysis of the Notices of Intent and Annual Reports

The NOIs for the lower basin communities vary significantly in content and reflect a widely divergent approach to managing stormwater runoff. Wet weather water quality monitoring results indicate a highly variable level of success at reducing pollutants in stormwater runoff. In order to achieve the goals of the Small MS4 Program, the EPA is required to evaluate the NOIs, as well as data and reports on stormwater management, of all of the lower basin communities following the public hearing and comment period. This information should be the basis for a coordinated set of BMPs for these communities. EPA should also require the lower basin communities to implement monitoring programs to measure the effectiveness of the required minimum measures, and their effects on water quality. We note that the Section 401 Water Quality Certification for the General Permit specifically gives the Department of Environmental Protection ("DEP") the authority to require such monitoring.

As set forth in greater detail below, we urge EPA to, *inter alia*: (1) clarify, as a procedural matter, that it will render new decisions regarding the NOIs submitted by the nine lower basin communities after it has engaged in a detailed, substantive review of each NOI following the public hearing and comment period, (2) identify which elements of each NOI fail to meet the mandatory statutory, regulatory and General Permit requirements, and (3) to authorize the nine communities to discharge under a geographically-based NPDES permit. At a

[2] "Storm water runoff from lands modified by human activity can harm surface water resources and, in turn, cause or contribute to an exceedance of water quality standards by changing natural hydrologic patterns, accelerating stream flows, destroying aquatic habitat, and elevating pollutant concentrations and loading." 64 Fed. Reg. 68,724 (Dec. 8, 1999). Section 305(b) reports submitted by the States, Tribes, and Territories in 1996 indicated that approximately 40 percent of the Nation's rivers, lakes and estuaries are impaired, and "found urban runoff/discharge from storm water sewers to be a major source of water quality impairment nationwide." *Id.* at 68,726.

minimum, in the alternative, each town or city with a non-compliant NOI should be required to modify its NOI to meet all legal requirements.

I. EPA Must Substantively Review the NOIs Following the Close of the Public Comment Period to Ensure Compliance with the Clean Water Act.

In *Environmental Defense Center v. Browner* ("*EDC*"), the U.S. Court of Appeals for the Ninth Circuit recently addressed the type of review required for NOIs submitted by Small MS4s seeking coverage under a general permit.[3] Certain petitioners in *EDC* challenged the Small-MS4 regulations on the grounds that they failed to require EPA to review the substance of NOI submissions to ensure compliance with the CWA, and that absent such a review the Small-MS4 program would amount to little more than a "paper tiger." In addressing this critical issue, the *EDC* Court held that the CWA imposes certain substantive requirements that must, consistent with the clear intent of Congress, be satisfied by Small MS4s seeking coverage under a General Permit. Specifically, the Court found "the plain language of § 402(p) of the CWA, 33 U.S.C. § 1342(p), expresses unambiguously Congress's intent that EPA issue no permits to discharge from municipal storm sewers unless those permits' require controls to reduce the discharge of pollutants to the maximum extent practicable.'"[4]

In light of the unambiguous requirements of the CWA, the *EDC* Court concluded in no uncertain terms that EPA must review the substance of NOIs to ensure compliance. As the Court explained:

> According to the Phase II Rule, the operator of a small MS4 has complied with the requirement of reducing discharges to the "maximum extent practicable" when it implements its stormwater management program, *i.e.*, when it implements its Minimum Measures. . . . Nothing in the Phase II regulations requires that NPDES permitting authorities review these Minimum Measures to ensure that the measures that any given operator of a small MS4 has decided to undertake will *in fact* reduce discharges to the maximum extent practicable . . . Therefore, under the Phase II Rule, nothing prevents the operator of a small MS4 from misunderstanding or misrepresenting its own stormwater situation and proposing a set of minimum measures for itself that would reduce discharges by far less than the maximum extent practicable.
>
> In fact, under the Phase II Rule, in order to receive the protection of a general permit, the operator of a small MS4 needs to do nothing more than decide for itself what reduction in discharges would be the maximum extent practical

[3] *EDC,* 344 F.3d 832 (9th Cir. 2003).
[4] *EDC*, 344 F.3d at 854. In addition to the "maximum extent practicable" requirement, the CWA and its regulations contain other important mandates, including the requirements (1) that discharges not cause or contribute to water quality violations, *see* discussion in Section II, below, and (2) that the Phase II stormwater regulations (of which the Small-MS4 regulations are a part) constitute a comprehensive program designed "to protect water quality." *Id.* at 844 (*citing* 33 U.S.C. § 1342(p)(6)).

> reduction. No one will review that operator's decision to make sure that it was reasonable, or even good faith. Therefore, as the Phase II Rule stands, EPA would allow permits to issue that would do less than *require* controls to reduce the discharge of pollutants to the maximum extent practicable. . . . We therefore must reject this aspect of the Phase II Rule as contrary to the clear intent of Congress.[5]

Review of the lower basin communities' NOI submissions indicates that for each of the nine communities there are at least some areas where they have not yet met the requirements of the law. Obviously, some communities have made significant progress. Those communities that are making progress in certain areas can share their expertise and the resources they have developed with other towns that are not as advanced.

As a result of the *EDC* decision (which the U.S. Supreme Court declined to review on *certiorari*), EPA must, as a matter of law, engage in a meaningful review of every small MS4 NOI submission, in order to ascertain compliance with the CWA and applicable standards. EPA's granting each of these towns or cities authority to discharge under the General Permit cannot be based on "administrative completeness" alone.

In addition, EPA cannot grant authority to discharge before the public has had an opportunity to comment on the substance of the NOI in a public hearing or through written comments.[6] Federal NPDES permit administration regulations require a public comment period

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[5] *EDC*, 344 F.3d at 855 (citations and parentheticals omitted) (italics in original). See also *id.* at 855, n. 32, stating, in pertinent part:

> That the Rule allows a permitting authority to review an NOI is not enough; *every permit must comply with the standards articulated by the Clean Water Act, and unless every NOI issued under a general permit is reviewed, there is no way to ensure that compliance has been achieved.*
>
> The regulations do require NPDES permitting authorities to provide operators of small MS4s with "menus" of management practices to assist in implementing their Minimum Measures, *see* 40 C.F.R. § 123.35(g), but again, nothing requires that the combination of items that the operator of a small MS4 selects from this "menu" will have the combined effect of reducing discharges to the maximum extent practicable.
>
> . . . .
>
> Absent review on the front end of permitting, the general permitting regulatory program loses meaning even as a procedural exercise. (Emphasis added).

[6] As the *EDC* Court stated:

> [W]e conclude that clear Congressional intent requires that NOIs be subject to the Clean Water Act's public availability and public hearings requirements. The Clean Water Act requires that "[a] copy of each permit application and each permit issued under [the NPDES permitting program] shall be available to the public," 33 U.S.C. § 1342(j), and that the public shall have an opportunity for a hearing before an (*sic.*) permit application is approved, 33 U.S.C. § 1342(a)(1). Congress identified public participation rights as a critical means of advancing the goals of the Clean Water Act in its primary statement of the Act's approach and philosophy. *See* 33 U.S.C. § 1251(e); *see also Costle v. Pacific Legal Found.,* 445 U.S. 198, 216, 100 S.Ct. 1095, 63 L.Ed.2d 329 (1980) (noting the "general policy of encouraging public participation is applicable to the administration of the NPDES permit program"). EPA has acknowledged that technical issues relating to the issuance of NPDES permits should be decided in "the most open, accessible forum

prior to the issuance of NPDES permits.[7] Massachusetts surface water discharge rules also require that DEP provide a minimum 30-day comment period prior to issuing NPDES permits.[8] Finally, 314 CMR 3.07(1) expressly prohibits the DEP from issuing a permit pursuant to 314 CMR 3.00 "when the conditions of the permit do not provide for compliance with the applicable requirements of the Massachusetts Clean Waters Act . . . the Clean Water Act . . . and the NPDES regulations at 40 C.F.R. Part 122." To meet its obligations under the CWA, the EPA must review and assess each NOI (after taking public comments into account) to ensure that each fully complies with the CWA and applicable standards and regulations, including the requirements that the stormwater management program include: controls to reduce the discharge of pollutants to the maximum extent practicable; controls that ensure that discharges will not cause in-stream exceedances of water quality standards; and the specific identification of control measures, BMPs and measurable goals that will control pollutants of concern.

II. EPA's Review Must Include An Assessment of Whether the Nine Communities Have Demonstrated that Their Discharges Will Not Cause or Contribute to State Water Quality Violations and that Their SWMP's will Control Pollutants of Concern and Ensure No In-Stream Exceedances of Water Quality Standards.

A central tenet of the CWA as well as the Small MS4 program is the requirement that NPDES permits ensure compliance with state water quality standards ("WQS"). This requirement is reiterated in the regulations, case law, and the General Permit.

In enacting the CWA, one of Congress' principal goals was to "recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, [and] to plan the development and use (including restoration, preservation, and

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> possible, and at a stage where the [permitting authority] has the greatest flexibility to make appropriate modifications to the permit." 44 Fed. Reg. 32,854, 32,885 (June 7, 1979).
>
> As we noted above, under the Phase II Rule it is the NOIs, and not the general permits, that contain the substantive information about how the operator of a small MS4 will reduce discharges to the maximum extent practicable. Under the Phase II Rule, NOIs are functionally equivalent to the permit applications Congress envisioned when it created the Clean Water Act's public availability and public hearing requirements. Thus, if the Phase II Rule does not make NOIs "available to the public," and does not provide for public hearings on NOIs, the Phase II Rule violates the clear intent of Congress.

EDC, 344 F.3d at 856-57 (emphasis added). *See also Costle v. Pacific Legal Foundation*, 445 U.S. 198 (1980) (interpreting Section 1342(a)(1) of the Clean Water Act, which allows EPA to issue a discharge permit only "after opportunity for public hearing," to necessarily require a 30-day public comment period). While EPA is now providing the comment period pursuant to which these comments are being submitted, this comment period post-dates EPA's grant of authority to discharge, contrary to the mandate of the CWA.

[7] Section 122.28(b)(1) states, "General permits may be issued, modified, revoked and reissued, or terminated in accordance with the applicable requirements of Part 124 . . . or corresponding State regulations." Part 124.10(a) requires permitting authorities to give notice when a draft permit has been prepared or tentatively denied. Part 124.10(b)(1) requires that public notice issued in compliance with paragraph (a) shall allow at least 30 days for public comment.

[8] 314 CMR 3.06(3) states, "General permits may be issued, renewed, modified and revoked by the Department in accordance with the applicable requirements of 314 CMR 2.00 and 3.00."[8] Section 2.06(1) requires DEP to provide public notice for tentative approvals or denials of draft permits (including general permits) that, pursuant to § 2.06(2), provides for at least a 30-day public comment period.

enhancement) of land and water resources."[9] In accordance with this goal, the CWA and its regulations require that all provisions in an NPDES permit must comply with state WQS.[10] Pursuant to section 401 of the CWA, EPA has an independent obligation to ensure such compliance prior to issuing the permit.[11] The requirement that permits comply with state WQS allows no exceptions for cost or technological feasibility.[12] The requirement that the permitted activity must comply with WQS is reiterated in regulations promulgated pursuant to the CWA,[13] including the Phase II stormwater regulations pertaining to Small MS4s, which explicitly state that an NPDES MS4 permit:

> will require *at a minimum* that [an operator of a Small MS4] develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from [its] MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.[14]

Consistent with the above requirements, as a threshold matter "[d]ischarges that would cause or contribute to instream exceedance of water quality standards" are not eligible for coverage under the General Permit.[15] The General Permit further mandates that stormwater discharge programs "must include a description of the BMPs that will be used to *ensure* that [exceedances of instream water quality standards] will not occur."[16] Part I.C. of the General Permit, entitled "Discharges to Water Quality Impaired Waters," further states:

1. The permittee must determine whether storm water discharges from any part of the MS4 contribute, either directly or indirectly, to a 303(d) listed water body.

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[9] 33 U.S.C. § 1251(b).
[10] 40 C.F.R § 122.4(d) ("No permit may be issued: . . . (d) When the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States"); 40 C.F.R § 122.44(d)(1) ("[E]ach NPDES permit shall include conditions meeting the following requirements when applicable: . . . (d) any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318, and 404 of CWA necessary to: . . . (1) [a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality . . . ." and 40 C.F.R § 122.44 (d)(4); see also 33 U.S.C. § 1370 (allowing state WQS to be more stringent than federal technology-based standards).
[11] 33 U.S.C. § 1341(a) (requiring compliance with WQS in both the state where the discharge originates and in any state affected by the discharge).
[12] *In re City of Fayetteville, Ark.*, 2 E.A.D. 594, 600-01 (CJO 1988) (interpreting Section 301(b)(1)(C) to require "unequivocal compliance with applicable water quality standards," and prohibiting "exceptions for cost or technological feasibility"), *aff'd sub nom. Arkansas v. Oklahoma*, 503 U.S. 91 (1992).
[13] *See* 40 C.F.R § 122.4(d) ("No permit may be issued: . . . (d) When the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States"); 40 C.F.R § 122.44(d)(1), (d)(4) ("[E]ach NPDES permit shall include conditions meeting the following requirements when applicable: . . . (d) any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318, and 404 of CWA necessary to: . . . (1) [a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality . . . .").
[14] 40 C.F.R. § 122.34(a) (emphasis added).
[15] NPDES General Permit for Stormwater Dischargers from Small Municipal Separate Storm Sewer Systems ("General Permit"), Part I.B.2 (k)
[16] *Id.*

2. The storm water management program must include a section describing how the program will control the discharge of the pollutants of concern and *ensure* that the discharges will not cause an instream exceedance of the water quality standards. This discussion must *specifically identify* control measures and BMPs that will collectively control the discharge of the pollutant(s) of concern. Pollutant(s) of concern refer to the pollutant identified as causing the impairment.[17]

EPA's Response to Comments reiterates the importance of specifically addressing discharges to impaired waters: "Part I.C.2 is intended to address the situation where waters have been identified as impaired by a pollutant which the MS4 will discharge. In such situations, *more aggressive* storm water strategies would likely be necessary than in the situation where the waters are not impaired."[18] In the event that stormwater discharges authorized under the General Permit are shown to have reasonable potential to cause or contribute to a violation of a water quality standard, the permittee may be required to operate under an individual NPDES permit, or face permit modification.[19]

Similarly, Part II of the General Permit, which provides conditions specific to Massachusetts permit holders, reiterates that the permittee must develop an enforceable program that satisfies both federal and state WQS.[20] Part IX (401 Water Quality Certification Requirements)[21] specifically requires that the permittee comply with state WQS, including 314 CMR 3.00 and 4.00.[22] Under 314 CMR 4.00, DEP must "limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained," via the establishment of effluent limitations, with "a *reasonable margin of safety* to account for any lack of knowledge concerning the relationship between the pollutants being discharged and their impact on water quality."[23] Further, Part IX

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[17] *Id.* at Part I.C (emphasis added). In addressing pollutants of concern, NOIs must address pollutants that secondarily cause or contribute to impairments. *See* EPA's Response to Comments on Draft Small-MS4 General Permit, p.6, stating:

> If there is an impaired water, the pollutant causing the impairment is usually listed. If the permittee discharges the pollutant which causes the impairment, the storm water management program must include best management practices (BMPs) designed to address such pollutant. In situations where a specific pollutant isn't listed, but rather an effect such as "low DO", is listed, the permittee should attempt to determine the secondary cause which produces the effect listed as the impairment. The permittee should attempt to address the secondary cause in the storm water management program, if possible.

It should be noted that CLF disagrees with EPA's use of the word "attempt" in the third and fourth sentences of the above-quoted paragraph. Owners and operators of Small-MS4s have a mandatory duty to *ensure* that their discharges will not cause an instream exceedance and, therefore, in "addressing" pollutants of concern must *actually implement* actions necessary to prevent discharges from causing or contributing to water quality impairments.

[18] EPA's Response to Comments on Draft Small MS4 General Permit, p. 6.

[19] General Permit, Part VIII (emphasis added).

[20] General Permit, Part II.A.

[21] Part IX is entitled "Massachusetts Water Quality Certification Requirements."

[22] Part IX requires compliance with the Massachusetts Clean Waters Act, Surface Water Quality Standards and the Surface Water Discharge Program.

[23] 314 CMR 4.03(1) (emphasis added). The implementation of BMPs is considered an "effluent limitation" in the absence of numerical limitations when numerical limitations are either infeasible or when such implementation is necessary to ensure compliance with applicable State and federal water quality standards. *See* § 3.11(11)(c);

requires that in Massachusetts, the permittee must comply with state water quality statutes, regulations and policies. Finally, the permittee is required to identify discharges to impaired waters as a priority and indicate in its program how storm water controls will be implemented.[24]

III. The Nine Lower Basin Communities' Discharges May Not be Eligible for Coverage Under the General Permit

A. The General Permit Does Not Cover Discharges that Cause or Contribute to Instream Exceedance of Water Quality Standards.

The General Permit explicitly states that it does not authorize "[d]ischarges that would cause or contribute to instream exceedance of water quality standards."[25] EPA review of the lower basin communities' NOIs and Annual Reports must address this issue specifically. The NOIs themselves and the Annual Reports are silent on this. Indeed, given that many of the receiving waters for these communities are impaired,[26] it appears that stormwater discharges do indeed cause or contribute to exceedances of WQS

B. The General Permit Does Not Cover Discharges that Do Not Comply with the Massachusetts Antidegradation Policy.

The General Permit makes clear that it does not authorize discharges prohibited under 40 C.F.R. 122.4, including "discharges not in compliance with the state's antidegradation policy."[27] In turn, 314 CMR 4.04(1) requires that "in all cases existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." The CWA clearly establishes that under no conditions may a State authorize a discharge that results in the degradation of an existing use of a receiving waterbody. The U.S. Supreme Court has recognized that State antidegradation implementation shall, *at minimum*, maintain existing instream water uses and the water quality necessary to protect such uses.[28] The Supreme Court affirmed EPA's determination that "no activity is allowable . . . which could partially or completely eliminate any existing use."[29] EPA's review of the lower basin communities' NOIs

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3.06(11)(b)(4). Section 122.34 of the Code further states that "narrative effluent limitations requiring implementation of [BMPs] are generally the most appropriate form of effluent limitations when designed to satisfy technology requirements (including reductions of pollutants to the maximum extent practicable).

[24] General Permit, IX.A, D.

[25] General Permit, Part I.B.2(k).

[26] Discussed in detail in individual comments for Town/City SWMPs in Attachment I.

[27] General Permit, Part I.B.2(i).

[28] *PUD No. 1 v. Washington Dep't of Ecology*, 511 U.S. 700, 718-719 (1994).

[29] *Id.* [emphasis added]; *see also* 1998 ANPRM, 63 Fed. Reg. at 36,742 at 36, 781:

> Section 131.12 (a)(1) of the antidegradation policy contained in the water quality standards regulation requires that existing uses and the water quality necessary to protect them be maintained and protected. *This provision, in effect, establishes the floor of water quality in the U.S.* It also protects the environment where the existing use of a water body happens to be better than the use designated by the State or Tribe. An existing use as defined in 40 C.F.R. 131.3 can be established by demonstrating that a use has actually occurred since November 28, 1975, or that the water quality is suitable to allow such uses to occur, whether or not such uses are designated uses

and Annual Reports must specifically encompass this. It has not been demonstrated that existing uses of the Charles River will be maintained and protected under the lower basin communities' current stormwater management program.

C. The Communities Discharge into Impaired Waterbodies and Therefore Must Treat These Waterbodies as a Priority.

Because the lower basin communities' Small MS4s discharge into waterbodies listed as impaired by the Commonwealth of Massachusetts, "more aggressive storm water strategies" are merited.[30] Section IX of the General Permit requires that permittees identify discharges to both public water supplies and impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. The NOIs do not specifically address this. Significantly, the NOIs fail to identify how the communities will specifically control "pollutants of concern," into waterbodies impaired by those pollutants as required by Part I.C.2 of the General Permit.

D. The Nine Lower Basin Communities Should Implement the Most Effective Structural and Non-Structural BMPs.

Given that the lower basin communities have high population and development density, they should adopt structural and non-structural BMPs that have been demonstrated to be effective in the urbanized Lower Basin environment. The Charles River is listed as "medium" stressed in the Massachusetts Water Resources Commission's *Stressed Basins in Massachusetts* Report. Pursuant to the General Permit, the stormwater management program must also minimize the loss of annual recharge to the groundwater within the basin from both new development and redevelopment projects. Review of the NOIs and Annual Reports reveals that communities have adopted different BMPs, have different operation and maintenance programs for these BMPs, and invest different levels of effort into these strategies. Many BMPs have not been utilized, and there is little utilization of EPA's "menu" of strategies for new development, which include green parking techniques to reduce impervious surfaces, and alternative pavers to replace asphalt or concrete in parking lots, driveways, and walkways as a way of promoting infiltration and reducing stormwater runoff.[31]

The Phase II regulation mandates that Small MS4s, in addressing post-construction stormwater management for new development and redevelopment projects, "must develop and implement strategies which include a *combination* of structural and/or *non*-structural [BMPs] appropriate for [the] community."[32] The regulation further mandates the "[u]se of an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, Tribal or local law."[33]

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for the water body in question. *All waters of the U.S. are subject to tier 1 protection*. [emphasis added].

[30] EPA's Response to Comments on Draft Small MS4 General Permit, p. 6.

[31] National Menu for Post-Construction Storm Water Management Best Management Practices for Stormwater Phase II, available at http://cfpub.epa.gov/npdes/stormwater/menuofbmps/pdf/final/sec-5_new.pdf ("Menu")

[32] 40 C.F.R. § 122.34(b)(5)(ii)(A).

[33] 40 C.F.R. § 122.34(b)(5)(ii)(B).

To achieve this Phase II goal, the lower basin communities' BMPs should be synergetic. A NPDES permit tailored to the lower basin region will help to facilitate this. For example, Cambridge's illicit detection and elimination program has been effective and this methodology could be used by other communities. Similarly, Wellesley and Brookline have passed by-laws that could also serve as models for other municipalities. Needham has adopted effective BMPs with measurable goals for each selected BMP for its public education, public participation and pollution prevention/good housekeeping programs. The lower basin communities should implement those BMPs and stormwater management strategies that have proven effective in the lower basin environment.

E. The NOIs Must be Amended to Reflect the Most Appropriate BMPs, with Measurable Goals and Milestones.

Phase II requires Small MS4 operators, in their NOIs, to identify BMPs for each of the six required control measures, measurable goals for each BMP, and a schedule for expected implementation, including where appropriate, the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action."[34] The EPA states that "[m]easurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness."[35] The EPA explains that measurable goals are "BMP design objectives or goals that *quantify* the progress of program implementation and the performance of your BMPs. They are objective markers or milestones that you (and the permitting authority) will use to track the progress and effectiveness of your BMPs in reducing pollutants to the MEP."[36] The EPA has provided "appropriate measurable goals" as guidance for each of the six required control measures in their "Stormwater Phase II Compliance Assistance Guide" published in March 2000 ("guidance standards").[37]

The NOIs demonstrate varying degrees of compliance with EPA's guidance standards for effective Phase II program development, implementation and enforcement. Several of the municipalities fail to provide BMPs for each required element of the six minimum control measures, including, for example, providing an opportunity for the public to participate in the

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[34] See 40 C.F.R. §122.34(d)(1) ("In your permit application (either a notice of intent for coverage under a general permit or an individual permit application), you must identify and submit to your NPDES permitting authority the following information . . . (i) The best management practices (BMPs) that you or another entity will implement for each of the storm water minimum control measures at paragraphs (b)(1) through (b)(6) of this section; [and], (ii) The measurable goals for each of the BMPs including, as appropriate, the months and years in which you will undertake required actions, including interim milestones and the frequency of the action.").

[35] See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000).

[36] See http://cfpub.epa.gov/npdes/stormwater/measurablegoals/part2.cfm; (emphasis added). The EPA further states, "EPA recommends that you develop a program with a variety of short- and long-term goals. At a minimum, your measurable goals should contain descriptions of actions you will take to implement each BMP, what you anticipate to be achieved by each goal, and the frequency and dates for such actions to be taken. Also, EPA recommends that you use your BMPs and measurable goals to help establish a baseline against which future progress at reducing pollutants to the MEP can be measured. For example, information on current water quality conditions, numbers of BMPs already implemented, and the public's current knowledge/awareness of storm water management would be useful in setting this baseline."

[37] See http://www.epa.gov/npdes/pubs/comguide.pdf.

implementation and review of the SWMPs. Every community fails to establish fully-compliant measurable goals for each selected BMP. In most cases, the measurable goals lack the specificity necessary to provide compliance "markers" for permittees, and to enable regulatory agencies to gauge program effectiveness and permit compliance. For example, several of the municipalities provide only general goals – such as "explore education programs" and "annual education" – that are not measurable in practice. Few of the municipalities, at any point, achieve the level of specificity provided in the guidance standards. Accordingly, while some municipalities have made significant progress toward the implementation of an effective SWMP, each of the nine municipalities should amend their NOIs to include BMPs for the six minimum control measures, and measurable goals (including, where appropriate, quantified interim milestones and/or markers) that meet the purposes of the Phase II program and EPA guidance, and are required by 40 C.F.R. §122.34.

IV. The General Permit Program Must Ensure Compliance on an Ongoing Basis.

In order to demonstrate compliance with minimum control measures, municipalities must meet the measurable goals identified in their NOIs.[38] Permittees must provide annual reports during the first permit term to evaluate (1) the compliance of the SWMP with the conditions of the permit, and (2) the "appropriateness of the selected BMPs in efforts toward achieving the defined measurable goals."[39] Accordingly, if EPA ultimately decides to grant authority to discharge under the General Permit (following its review and necessary enhancements to the NOIs), it must vigilantly review the Annual Reports to ensure that the measurable goals are being implemented in a meaningful and timely manner, and that the program is achieving compliance with the CWA. If progress is determined to fall short of meeting the "maximum extent practicable" standard, or the communities' SWMPs do not ensure compliance with state WQS or fail to control pollutants of concern, EPA should require stronger actions or revoke coverage under the General Permit and require an individual permit.[40] Under II.D.2 of the General Permit, if a town wishes to replace a BMP that it deems to be ineffective or infeasible, it is required to submit a modification request explaining why the BMP is ineffective or infeasible, and analysis of why the replacement BMP is expected to achieve the goals of the BMP replaced.[41] If the town does not intend to implement certain BMPs, it is required to replace them with equivalent BMPs by following the procedure set out above**.** Massachusetts has an affirmative duty to ensure compliance with the General Permit and applicable regulations. Part

[38] Under 40 C.F.R. § 122.34, general permit holders are required to meet measurable goals in their NOIs if EPA has issued a menu of BMPs prior to the submission of the NOIs. In the present case, EPA issued the final menu of BMPs in October, 2001 (in fact, these BMPs were available as guidance in January, 2000). Personal communication 12/7/04, Jack Faulk, EPA's Office of Wastewater Management. Accordingly, the Town is held to the measurable goals set forth in its June 27, 2003 NOI, Part II.6.
[39] General Permit, Part D, Paragraph 1, 2.
[40] See 314 C.M.R. 3.07 ("The Department shall not issue a permit pursuant to 314 CMR 3.00: (1) When the conditions of the permit do not provide for compliance with the applicable requirements of Massachusetts Clean Waters Act . . . the Clean Water Act . . . and the NPDES regulations at 40 CFR Part 122.")
[41] General Permit, II.D. 2(c).

IX, Section F requires DEP to direct the permittee to correct any violation of 314 CMR 4.00 or conditions of its certification.[42]

Annual Reports are required to contain: (1) a self assessment of compliance with the permit conditions; (2) an assessment of the appropriateness of the selected BMPs; (3) an assessment of the progress towards achieving the measurable goals; (4) a summary of results of any information that has been collected and analyzed (including any type of data); (5) a discussion of activities for the next reporting cycle; (6) a discussion of any changes in identified BMPs or measurable goals; and (7) reference to any reliance on another entity for achieving any measurable goal.[43] The Annual Reports exhibit varying degrees of compliance with the General Permit requirements, as shown in the attached evaluation of each community's NOI and Annual Report. We note that Cambridge's Annual Report, which is comprehensive and shows significant progress, can serve as a model for other towns.

[42] *See* General Permit, Part IX(F) ("Should any violation of the Massachusetts Surface Water Quality Standards (314 CMR 4.00) or the conditions of this certification occur, the Department will direct the permittee to correct the violation(s)").
[43] See General Permit, Part II.F.2.a-g.

V. Conclusion

In sum, EPA is obligated to perform an in-depth review of the lower basin communities' NOIs following the hearing and receipt of public comments to determine whether they will reduce stormwater pollution to the maximum extent practicable, will ensure compliance with water quality standards, specifically address pollutants of concern and whether they comply with the other mandatory requirements of the CWA, the Phase II regulations, and the General Permit. We urge the EPA to clarify that it will reach a new decision as to whether the nine lower basin communities are entitled to coverage under the General Permit based on this review, and to notify the communities, CLF, CRWA and the public of how and when that decision will be rendered.

We also urge you to find that, although many of the stormwater program are commendable in various aspects, as a whole, the lower basin communities' current SWMPs are not adequate to meet the requirements of the CWA; to require that the towns adopt compliant measurable goals and effective SWMPs based on the condition of the receiving water, the lower basin of the Charles River, and the urbanized nature of the communities; and to require the lower basin communities to strengthen their NOIs to meet the requirements discussed above. We urge EPA to consider issuing a single, geographically-based NPDES Phase II permit for these nine lower basin communities as the most effective means to achieve the requirements of the law.

CLF and CRWA appreciate the opportunity to comment on these NOIs. We welcome the opportunity to work with EPA and the communities to ensure that the Phase II program achieves its full potential in protecting the Charles River and fulfilling the requirements and ultimate goals of the CWA.

Sincerely,

Carol Lee Rawn
Conservation Law Foundation

Margaret Van Deusen
Charles River Watershed Association

Cc: David Gray, EPA
David Webster, EPA
Bill Walsh-Rogalski, EPA
Arleen O'Donnell, DEP
Glenn Haas, DEP
Towns of Brookline, Cambridge, Dedham, Needham, Newton, Waltham, Watertown, Wellesley and Weston

ATTACHMENTS

Attachment I

Individual Municipality Assessments

TOWN OF BROOKLINE

The Brookline MS4 discharges into at least four impaired waterbodies, including the Charles River, Muddy River, Sawmill Brook and Halls Pond. Listed impairments for Saw Mill Brook include organic enrichment/low DO, pathogens, fecal coliform bacteria and elevated nutrient levels. Saw Mill Brook has elevated fecal coliform bacteria levels of 520-7000 cfu/100mL, which are of human origin.[1] Sections of the Saw Mill Brook have severe water quality degradation, and have been assessed as non-support for aquatic life, primary and secondary recreation.[2] The Muddy River has historically exhibited degraded water quality due to CSOs, stormdrain discharges (dry and wet weather) and other sources of urban runoff.[3] The Muddy River is impaired for priority organics, metals, nutrients, siltation, organic enrichment/low DO, pathogens, oil and grease, and taste, odor and color.[4] Highly elevated fecal coliform bacteria counts (between 60 – 68800 cfu/100mL during baseline conditions and 130 – 23000 cfu/100mL during wet weather conditions) were documented in 1998.[5] The entire length of the Muddy River is assessed as non-support for aquatic life, fish consumption, primary contact, secondary contact and aesthetics. The Town of Brookline is under a finding of violation of Massachusetts water quality standards by the EPA for extensive coliform bacteria contamination in the Muddy River and subsequently the Charles River.[6] This infraction is a violation of the small MS4 general permit authorizing Brookline to discharge its stormwater (approved by EPA on September 2, 2003). All of the impairments listed above are associated with stormwater. Clearly, as Brookline is discharging into waters already severely damaged by stormwater, with no assimilative capacity, it is imperative that an effective program be implemented in a timely manner.

As discussed above, Section IX of the General Permit requires that the permittee identify discharges to impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. Brookline does not do so. Further, Brookline does not identify how it will specifically control "pollutants of concern" into water bodies impaired by those pollutants as required by Part I.C.2 of the General Permit. As explained above, Brookline has an affirmative duty to show that its program will ensure compliance with WQS. Brookline has not done so. Further, the NOI is neither specific enough to provide measurable goals nor aggressive enough to ensure compliance with water quality standards by the spring of 2008. See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

Assessment of Brookline NOI

Public Education (Minimum Control Measure #1)

While Brookline identifies several general goals for implementing Control Measure #1, its "measurable goals" are too general to enable EPA and/or DEP to gauge the

[1] Charles River Watershed 1997/1998 Water Quality Assessment Report, p. 63.
[2] *Id*.
[3] *Id*. at p. 82.
[4] Proposed Massachusetts Year 2004 Integrated List of Waters, April 2004, p. 93.
[5] Charles River Watershed 1997/1998 Water Quality Assessment Report, p. 82.
[6] As a result of EPA findings, the Town of Brookline must require that illicit sewer connections and other contributing sources must be identified and eliminated by April 23, 2005.

effectiveness of program implementation. For example, BMP #1E, entitled "Posters/Videos in Schools (Grades 8-12)," establishes "annual education" as its only measurable goal. 40 C.F.R. §122.34(d)(1) requires greater specificity, including (for example) specified target months and years for implementation, interim milestones, and frequency of action.[7] In its 1999 review of the Town's Stormwater Management Plan, the Center for Watershed Protection (CWP) recommended that the town consider expanding its public education program to include municipal education such as public works yard management, measures to reduce spills, or hydrocarbon pollution at gas stations, and program focusing on commercial users such as restaurants. While the NOI includes BMP #6A - the DPW Employee Training Program, it does not specifically address this measure. The EPA states that "[m]easurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness."[8] As such, EPA provides four (4) "Appropriate Measurable Goals" for complying with the requirements of minimum control measure #1, two of which identify specific percentages of the public reached and in compliance with the recommendations of the public education program. While the education of high school students might be considered a minor component of Brookline's SWMP, the Town fails to establish milestones for any of its public education initiatives. While Brookline's "public education" goals are generally acceptable, its goals are not measurable; neither EPA nor DEP can enforce their implementation absent the identification of measurable goals, as required by 40 C.F.R. §122.34.

Public Participation (Minimum Control Measure #2)

In order to comply with the Phase II rules, Brookline must ensure that all public involvement activities (re: minimum control measure #2) comply with state public notice requirements at MGL Chapter 39 Section 23B and local public notice requirements.[9] This requirement includes the condition that "the permittee . . . provide opportunity for the public to participate in the implementation and review of the storm water management program."[10] The Town of Brookline fails to provide the opportunity for the public to participate in the implementation and review of the SWMP, and its NOI fails to identify a BMP for this requirement or a measurable goal for its implementation.[11] In regard to its other public involvement initiatives, Brookline fails to establish measurable goals to enable EPA and/or DEP to gauge the effectiveness of program implementation and ensure compliance with the Clean Water Act. For example, Brookline already has a stormdrain stenciling program, but instead of providing measurable goals to gauge the

[7] See 40 C.F.R. §122.34(d)(1) ("In your permit application (either a notice of intent for coverage under a general permit or an individual permit application), you must identify and submit to your NPDES permitting authority the following information . . . (i) The best management practices (BMPs) that you or another entity will implement for each of the storm water minimum control measures at paragraphs (b)(1) through (b)(6) of this section; [and], (ii) The measurable goals for each of the BMPs including, as appropriate, the months and years in which you will undertake required actions, including interim milestones and the frequency of the action.").

[8] See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000).

[9] General Permit, Part II(B)(2).

[10] General Permit, Part II(B)(2)(a).

[11] EPA notified Brookline of its failure to require a public meeting and/or hearing on August 27, 2003.

effectiveness of the program the Town merely notes that the program already exists.[12] The same is true for Brookline's existing community clean up program. Further, Brookline's NOI does not implement nor identify for implementation many of EPA's recommended BMPs for compliance with minimum control measure #2. As a result, it does not appear that Brookline will effectively reach out and engage the public in the development, implementation and maintenance of its SWMP.[13]

Illicit Discharge Detection and Elimination (Minimum Control Measure #3)
Brookline must develop, implement and enforce a program to both detect and eliminate illicit discharges into the storm water system.[14] According to its NOI, Brookline has a map of the stormdrain system and an I&I program in place. The Center for Watershed Protection recommended several elements in 1999 that should be incorporated into the town's GIS system, including location of structural controls owned and operated by the municipality, location of landfills and treatment storage disposal facilities, hazmat corridors and facilities, facilities with spill response/containment plans, CERCLA facilities, RCRA regulated facilities, sites with NPDES permits for the discharge of stormwater or process water, MWRA TRAC facilities, gas stations and other "hot spots." Although the town of Brookline does have a stormdrain system map (BMP #3A), it is unclear from the NOI whether it contains details of potential pollutant sources.

It is unclear from Brookline's NOI whether the programs listed include a plan to detect and address non-storm water discharges to the stormdrain system, including illegal dumping, as required by the General Permit. While implementation of an I&I program is important with respect to the sanitary sewer system, it does not pertain to this minimum control measure, which requires detection and elimination of illicit discharges of wastewater to the stormdrain system. In addition, Brookline's illicit discharge detection and elimination program should include the education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste.[15] As discussed above, Brookline must establish measurable goals for each of the BMPs including, as appropriate, the months and years in which it will undertake required actions, including interim milestones and the frequency of the action.[16] Brookline has adopted a by-law (Article 8.25) prohibiting illicit discharges and connections to the stormwater system, with appropriate enforcement procedures and actions. It is also important that the

[12] The existence of a particular program does not exempt Brookline from the requirement of submitting measurable goals as part of its NOI, as required by 40 C.F.R. §122.34(d)(1).
[13] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-23 ("The public participation process should make every effort to reach out and engage all economic and ethnic groups. EPA recognizes that there are challenges associated with public involvement. Nevertheless, EPA strongly believes that these challenges can be addressed through an aggressive and inclusive program.").
[14] General Permit, Part II(B)(3).
[15] As required by General Permit, Part II(B)(3)(d).
[16] See 40 C.F.R. §122.34(d)(1).

Town of Brookline document actions taken under this by-law, as recommended by EPA.[17]

Construction Site Runoff Control (Minimum Control Measure #4)
Brookline has made significant progress toward achieving compliance with minimum control measure #4 (Construction Site Runoff Control) primarily due to the adoption of Article 8.25, which applies to construction site stormwater runoff. Compliance with the General Permit, WQS and the Clean Water Act will ultimately be determined by the Town's enforcement of Article 8.25. A critical shortfall of Brookline's SWMP is its failure to include in its NOI measurable goals that would enable EPA and/or DEP to gauge permit compliance and program effectiveness. For example, BMPs 4B ("Erosion and Sediment Control Plan Reviews") and 4C ("Construction Inspection") identify the need to gauge permit compliance and program effectiveness, but the Town does not identify measurable goals for these BMPs.[18] EPA recommends that permittees set percentage-goals for program compliance, including confirmation of improved water quality.[19] Thus, while the establishment of an enforceable regulation is a critical first step, Brookline must immediately identify measurable goals to enable regulators to ensure compliance with the General Permit, WQS and the Clean Water Act. Further, measurable goals will help Brookline gauge its own progress and implement any necessary program improvements.

Post Construction Runoff Control (Minimum Control Measure #5)
Brookline has also made significant progress toward achieving compliance with minimum control measure #4 (Post Construction Runoff Control) primarily due to the adoption of Article 8.25, which applies to post construction stormwater runoff. Given that Part II(B)(5) of the General Permit requires the development, implementation and enforcement of a stormwater program for new development and redevelopment projects, it is important that Brookline provide measurable goals to enable EPA and/or DEP to ensure such actions are taken. In its NOI, Brookline has not provided sufficient measurable goals for BMPs 5B thru 5D. EPA has determined that an "appropriate" measurable goal for this control measure would include the identification of specific program goals, such as "reduced percent of new impervious surfaces associated with new development projects," and "improved clarity and reduced sedimentation of local waterbodies."[20] Brookline has not established measurable goals of this specificity and nature. Thus, while the establishment of an enforceable regulation is a critical first step for post construction runoff control, Brookline must immediately identify measurable goals to enable regulators to ensure compliance with the General Permit, WQS and the

[17] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-28.
[18] Brookline provides only that such reviews and inspections "start after ordinance is adopted." As discussed above, 40 C.F.R. §122.34(d)(1) requires Brookline to establish measurable goals for each of the BMPs including, as appropriate, the months and years in which you will undertake required actions, including interim milestones and the frequency of the action.
[19] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32.
[20] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-35.

Clean Water Act. Further, measurable goals will help Brookline gauge its own progress and implement any necessary program improvements.

Pollution Prevention/Good Housekeeping (Minimum Control Measure #6)
The "pollution prevention and good housekeeping" minimum control measure requires *both* MS4 maintenance (including inspection) and pollution prevention (e.g. programs to promote litter reduction, proper animal waste disposal, reductions in pesticide use, reductions in salt runoff from salt storage sites, etc. are EPA-recommended BMPs). The NOI must contain BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action." Brookline's NOI does not identify sufficient measurable goals, procedures or strategies for implementing these programs. For example, an "annual inspection/review of maintenance activities" does not ensure that a maintenance program will be operated in compliance with the General Permit, and does not provide EPA and/or DEP with adequate information to gauge permit compliance and program effectiveness (see BMP 6B). Similarly, "annual training will be conducted" is not a measurable goal for Brookline's Employee Training Program (see BMP 6A). Additionally, CWP suggested that the Town provide guidance on BMP sizing and location, or reference a manual such as the Massachusetts BMP Manual. This recommendation was not specifically addressed in the NOI although there may be such guidance provided in the recently adopted stormwater bylaw. EPA has determined that an "appropriate" measurable goal for this minimum control measure would include percentage-based compliance goals, such as "a certain percentage reduction in floatables discharged." While Brookline may be conducting some pollution prevention and good housekeeping activities, providing measurable goals to EPA and DEP is a requirement of Phase II, and is a critical element of program enforcement for regulators.

Brookline's failure to establish measurable goals for each minimum control measure violates Part II(A)(5) of the General Permit, which requires permittees to identify measurable goals for each BMP, including timelines and milestones for implementation. While Section F of the NOI provides some information about time frames for program implementation, many of the indicators extend for the duration of the 5-year permit period, providing little or no information about when the identified goals will be completed.

Assessment of Brookline Annual Report

While the Town of Brookline's April 23, 2004 Annual Report evidences significant progress toward the adoption of a comprehensive SWMP (and existing programs), the Report further reveals Brookline's general failure to establish measurable goals that would enable EPA/DEP to gauge permit compliance and program effectiveness, and allow Brookline to provide substantive assessments in its Annual Reports. For example, in three critical areas of the SWMP – IDDE (BMP 3B), Construction Site Inspections (BMP 4C), and Inspection of Runoff Control Structures/Practices (BMP 5D) – Brookline has not established measurable goals to meet in subsequent Annual Reports, and indicates only that it will continue such programs in the

future.[21] While Brookline does provide detailed information for PY1 progress for BMP 3B, it does not provide any substantive information for PY1 progress for BMPs 4C and 5D. Brookline reports that it has been aggressively enforcing Article 8.25 (Brookline Stormwater Program By-Laws).[22] However, it is unclear how EPA and/or DEP can ensure permit compliance and program effectiveness in upcoming permit years absent the identification of measurable goals.

Additional issues with the SWMP evidenced by Brookline's Annual Report include:

- On August 27, 2003, the Town of Brookline was notified that its NOI was deficient for failure to provide an opportunity for the public to participate in the implementation and review of the SWMP either through public meeting or public hearing.[23] There is no evidence in the Annual Report that such meetings or hearings have been conducted or planned.

- Brookline "must inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper waste disposal."[24] While the Town has implemented some outreach programs, there is insufficient information provided by the Annual Report to gauge compliance with this condition of the General Permit, and no measurable goals have been provided by the Town to gauge program effectiveness.

- Brookline's IDDE program, which appears to be operational and effective, does not identify measurable goals for future implementation and effectiveness. Brookline indicates that it plans to step up the program,[25] but does not indicate to what degree, or what level of effectiveness it seeks to achieve. Brookline's IDDE program must contain procedures for documenting actions and evaluating impacts on the storm sewer system subsequent to removal of an illicit discharge.[26] We recognize that Brookline's IDDE program has thus far produced positive results, but encourage the Town to establish measurable goals that are necessary to ensure future permit compliance and program effectiveness.

- There is a notable lack of progress toward the pollution prevention component of minimum control measure #6. As discussed above, the "pollution prevention and good housekeeping" minimum control measure requires *both* MS4 maintenance (including inspection) and pollution prevention (e.g. programs to promote litter reduction, proper animal waste disposal, reductions in pesticide use, reductions in salt runoff from salt storage sites, etc. are EPA-recommended BMPs). Brookline identifies the need to reduce pollution from fertilizers and wintertime salt application, but has not established measurable goals for the achievement of this program. The Annual Report provides limited information about salt use, and no information about net reductions. While we

[21] See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.
[22] Personal communication with Jay Hersey, Environmental Engineer, Brookline Department of Public Works, December 29, 2004.
[23] Letter Mr. A. Thomas DeMaio, Commissioner of Public Works, signed Shelley Puleo, Environmental Protection Specialist, Municipal Assistance Unit, MA Department of Environmental Protection, August 27, 2003.
[24] General Permit, Part II(B)(3)(d).
[25] Annual Report, Part VI.
[26] General Permit, Part II(B)(3)(c)(iv).

recognize Brookline's identification of these program goals, we recommend the adoption of measurable goals for pollution reduction and prevention, and a stronger emphasis on pollution prevention to complement the Town's cleanup efforts.

Brookline's Annual Report evidences significant progress toward the implementation of an effective SWMP with the overall exception of its failure to identify measurable goals and milestones for each of its BMPs. While the adoption and enforcement of Article 8.25 could serve as an effective model for other towns and cities, Brookline must take immediate action in regard to the establishment of measurable goals and interim milestones to ensure compliance with WQS by 2008**.**

CITY OF CAMBRIDGE

Cambridge discharges include those into a segment of the Charles River (MA72-08) and into Alewife Brook, both of which are impaired for their designated uses. The Charles River segment is highly impaired by unknown toxicity; priority organics; metals; nutrients; organic enrichment/low dissolved oxygen; pathogens; oil & grease; taste, odor and color; noxious aquatic plants and turbidity. Uses in Alewife Brook are impaired by metals; nutrients; organic enrichment/low dissolved oxygen; pathogens; oil & grease; taste, odor and color; and objectionable deposits. According to DEP's Massachusetts Year 2004 Integrated List of Waters, fecal coliform levels were high for all segments, particularly in MA72-07 where levels ranged from <10 to 59,000 cfu/100ml during wet weather conditions. Elevated nutrients and high chlorophyll concentrations (as high as 48µg/L in MA72-30) were also common in all three segments. Sediment contamination in the form of acute toxicity, heavy metals, polyaromatic hydrocarbons (PAHs), and organics exist in this segment of the Charles River. This segment has elevated concentrations of phosphorus and chlorophyll a, and a severely degraded benthos community. DPH has a fish consumption advisory in effect because of persistent elevated levels of PCB in carp. Finally, the aesthetic use of the river is also not supported for the entire 8.6 miles of this segment. High levels of turbidity, occasional observations of objectionable solids, and sewage-related odors and the presence of nuisance aquatic vegetation all contribute to impaired aesthetic quality in this segment.

As discussed above, Section IX of the General Permit requires that the permittee identify discharges to impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. Cambridge does not do so. Further, Cambridge does not identify how it will specifically control "pollutants of concern" into water bodies impaired by those pollutants as required by Part I.C.2 of the General Permit. As explained above, Cambridge has an affirmative duty to show that its program will ensure compliance with WQS. Cambridge has not done so. Further, the NOI is neither specific enough to provide measurable goals nor aggressive enough to ensure compliance with water quality standards by the spring of 2008.[27]

Assessment of Cambridge NOI

Public Education (Minimum Control Measure #1)

The City of Cambridge identifies several general goals for implementing the public education element of its stormwater management program and recognizes that "the effectiveness of this program is dependent on the City's ability to develop and provide information to the public."[28] However, the City does not identify sufficient measurable goals to enable EPA and/or DEP to gauge the effectiveness of program implementation.[29] EPA provides four (4) "Appropriate Measurable Goals" for complying with the requirements of minimum control measure #1, two of which identify specific percentages of the public reached and in compliance with the recommendations of the public

[27] See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.
[28] Draft Stormwater Management Program, City of Cambridge, MA (July 2003), p. D-2
[29] The EPA states that "[m]easurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness." See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000).

education program. Cambridge identifies direct mail, door-to-door distribution and/or cable television as possible distribution channels, but does not establish distribution or public compliance goals. Similarly, Cambridge indicates that it will implement a catch basin curb marker program (see BMP 1.d), but fails to specify specific goals or interim milestones for program implementation. The City of Cambridge must amend its NOI to include measurable goals for its public education program to comply with 40 C.F.R. 122.34. Such measurable goals should include interim milestones for program implementation and distribution and public compliance goals for its outreach programs.

Public Participation (Minimum Control Measure #2)

Cambridge's NOI recognizes that the City must comply with state public notice requirements at MGL Chapter 39 Section 23B and local public notice requirements,[30] and commits to annual meetings to discuss stormwater issues. Cambridge must also determine the appropriate BMPs and measurable goals to inform and utilize the public to develop and implement its SWMP. Effective BMPs are designed to reduce the discharge of pollutants from small MS4s to the "maximum extent practicable."[31] The BMPs provided by Cambridge are insufficient to achieve this standard. Cambridge identifies only two BMPs in addition to its public meeting commitment, one of which (BMP 2.c: Recycling of Hazardous and Solid Waste) is a Pollution Prevention/Good Housekeeping program (see Minimum Control Measure #6). The other (BMP 2.b: Support Volunteer Efforts) establishes only Cambridge's general intent of supporting watershed and volunteer groups, and identifies only one measurable goal (linking the url:s for two of these groups to the DPW website by the end of PY1) that is not representative of the best management practices in the field for engaging the public in the SWMP. Cambridge should improve its public participation programs to include the establishment of a volunteer water quality monitoring program, a citizen watch group program and an "Adopt A Storm Drain" program.[32] Cambridge must identify measurable goals and (where appropriate) interim milestones for each of these BMPs, including community participation goals.[33] While some of the BMPs recommended by EPA for this control measure are mentioned in the Draft SWMP, Cambridge must amend its NOI to provide measurable goals for the development, implementation and ongoing operation of these BMPs. Without a more substantial commitment toward public engagement in its NOI, Cambridge has not met the requirements of Phase II.[34]

Illicit Discharge Detection and Elimination (Minimum Control Measure #3)

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[30] General Permit, Part II(B)(2).

[31] See 314 C.M.R. 3.06(11)(b)(4).

[32] EPA recommends separate BMPs for each of these programs. See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000), p. 4-24.

[33] EPA recommends the identification of specific percentages for community participation in monitoring and cleanups, and percentages of neighborhoods with citizen watch groups. See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000), p. 4-24.

[34] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-23 ("The public participation process should make every effort to reach out and engage all economic and ethnic groups. EPA recognizes that there are challenges associated with public involvement. Nevertheless, EPA strongly believes that these challenges can be addressed through an aggressive and inclusive program.").

Cambridge must develop, implement and enforce a program to both detect and eliminate illicit discharges into the storm water system.[35] According to its NOI and Draft SWMP, Cambridge has completed system mapping and has an IDDE system in place. The Center for Watershed Protection recommended several elements in 1999 that should be incorporated into the town's GIS system, including location of structural controls owned and operated by the municipality, location of landfills and treatment storage disposal facilities, hazmat corridors and facilities, facilities with spill response/containment plans, CERCLA facilities, RCRA regulated facilities, sites with NPDES permits for the discharge of stormwater or process water, MWRA TRAC facilities, gas stations and other "hot spots." It is unclear whether Cambridge has implemented these recommendations. Cambridge has also identified a BMP for the education of public employees, the general public and businesses about stormwater issues and pollution prevention. The primary area of concern in regard to Minimum Control Measure #3 is the development of an IDDE ordinance, which the City plans to present to the City Council in PY5. While Cambridge provides good interim milestones for developing the ordinance, it must be developed, implemented and enforced by the conclusion of PY5. If the City Council decides to amend or otherwise oppose the proposed ordinance, Cambridge risks non-compliance with the General Permit and the state regulations. Given that the IDDE ordinance is the cornerstone of Minimum Control Measure #3, it is critical that Cambridge accelerate the development and adoption of the ordinance to allow for any uncertainties that might arise in the process. The current implementation schedule does not ensure compliance with the General Permit and WQS.

Construction Site Runoff Control (Minimum Control Measure #4)

The City of Cambridge identifies only two BMPs in its NOI/Draft SWMP for the implementation of its Construction Site Runoff Control Program. BMP 4.a encompasses the entire control measure ("Develop Program for Construction Site Runoff Control"), identifies the individual program requirements, but provides only general measurable goals for the implementation of the overall program (i.e. not the individual elements). In 1999, the Center for Watershed Protection (CWP) noted that the City had no centralized program requiring erosion and sediment control. The CWP recommended maintenance requirements along with a performance bond and an inspection schedule that includes a pre-construction meeting. EPA recommends that permittees set percentage-goals for program compliance, including confirmation of improved water quality.[36] Other municipalities have established BMPs and measurable goals for each element of program development (e.g. development of ordinance, on-site erosion and sedimentation control plans, inspections and enforcement).[37] Thus, while the establishment of a construction site program is the overall goal, Cambridge must identify more specific measurable goals to enable regulators to ensure compliance with the General Permit, and that its BMPs reduce the discharge of pollutants from small MS4s to the "maximum extent

[35] General Permit, Part II(B)(3).
[36] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32.
[37] See, e.g., Town of Wellesley NOI.

practicable."[38] Further, Cambridge intends to submit the program (including the required regulation or ordinance) to the City Council "for consideration" in PY 5. The General Permit requires Cambridge to develop, implement and enforce this program by the conclusion of PY5. While this is *possible* within the current schedule proposed by Cambridge, the City should accelerate the development, implementation and enforcements of its construction site runoff program and the required regulation or ordinance to ensure compliance with the General Permit, state regulations and WQS.

Post Construction Runoff Control (Minimum Control Measure #5)
Cambridge intends to develop its post construction runoff control program by revising its sewer and stormwater use regulations and guidelines (see BMP 5.a). The City states, "[i]t is anticipated that these Regulations will include a provision for post-construction runoff controls, provisions to ensure adequate long term operation and maintenance of best management practices, and provisions to ensure that any controls that are put in place will prevent or minimize impacts to water quality." The City does not identify BMPs for the development and implementation of each required program element (e.g. ordinance, O&M procedures, monitoring procedures). The City provides a schedule for developing the program, but states that, "[t]he final Regulation, guidance and monitoring program will be developed during Year 5 based upon community input and presented for consideration for adoption. If adopted implementation will begin immediately."[39] The development, implementation and enforcement of a post construction runoff program are required. If the City intends to meet this control measure by revising current stormwater regulations, the updated version *must* include each program requirement. Similarly, the regulation, guidance and monitoring program may be finalized in PY5, as indicated by the schedule provided by the Draft SWMP, but implementation of the program cannot be contingent upon adoption of the proposed program by the City. Implementation and enforcement are required by the end of PY5. Cambridge must also provide measurable goals to enable EPA and/or DEP to ensure that a post construction runoff program is developed, implemented and enforced. The EPA has determined that "appropriate" measurable goals for this control measure include the identification of specific program goals, such as "reduced percent of new impervious surfaces associated with new development projects," and "improved clarity and reduced sedimentation of local waterbodies."[40] Cambridge must identify similar measurable goals to comply with Part II.A.5 of the General Permit and 40 C.F.R. §122.34(d)(1). We strongly recommend that Cambridge also accelerate the development and implementation of its post construction runoff program to ensure compliance with the General Permit, state regulations and WQS by PY5, and amend its NOI/Draft SWMP to include appropriate measurable goals and interim milestones.

Pollution Prevention/Good Housekeeping (Minimum Control Measure #6)
The "pollution prevention and good housekeeping" minimum control measure requires *both* MS4 maintenance (including inspection) and pollution prevention. The NOI must

[38] See 314 C.M.R. 3.06(11)(b)(4).
[39] See Draft Stormwater Management Program, City of Cambridge, MA, p. D-18.
[40] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-35.

contain appropriate BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action."[41] EPA has determined that "appropriate" measurable goals for this minimum control measure include percentage-based compliance goals, such as "a certain percentage reduction in floatables discharged."[42] Programs to promote litter reduction, proper animal waste disposal, reductions in pesticide use, reductions in road salt use and reductions in salt runoff from salt storage sites are additional examples of EPA-recommended BMPs.[43] Cambridge has several pollution prevention and good housekeeping procedures in place, including catch basin cleaning, waste management and recycling, and snow operations procedural review. However, Cambridge's program (as reported by the NOI) is too general. In 1999, the CWP noted that "[s]cheduling the maintenance and cleaning of BMPs, sewers and storm drains should be a top priority" for the City's pollution prevention program. It does not appear that Cambridge has done so. The City must make more of an effort to provide measurable goals for existing and future program activity to enable EPA and/or DEP to enforce the Phase II SWMP requirements, and to ensure compliance with 40 C.F.R. §122.34(d)(1). For example, Cambridge should provide percentage goals for reductions in floatables discharged, reductions in sand/salt use, and improved catch basin cleaning. Cambridge's public employee education program should not be limited to those employees with stormwater responsibilities.[44] Such improvements to Cambridge's SWMP are critical to ensure that the City reduces pollution to the "maximum extent practicable" and to enable EPA and/DEP to enforce Phase II of the NPDES program.

Assessment of Cambridge Annual Report

Cambridge's Annual Report evidences a good-faith effort to implement the requirements of Phase II, and should be regarded as a model for other municipalities. We commend the City for establishing a comprehensive set of BMPs, many of which are broken down into sub-parts, and providing progress analysis on each element of each BMP. The City provides detailed and extensive progress analysis and planned activities for the upcoming permit year for all BMPs, as required by the General Permit. Cambridge has also provided substantial data as appendices to the Annual Report, as envisioned by the General Permit. The City reports progress in most program areas, and has achieved many of the general goals established in its NOI. Cambridge is moving ahead with the substantive parts of the Phase II SWMP, including the engagement of the public in the development of its stormwater program, the development of IDDE regulations, and the drafting of sewer use regulations and guidance. Like most SWMPs submitted by municipalities in the lower Charles River watershed, the Cambridge SWMP could be improved by establishing more effective measurable goals, including percentage-based compliance targets

[41] See 40 C.F.R. §122.34(d)(1).
[42] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-37.
[43] *Id*.
[44] EPA recommends that the employee training program should detail how to incorporate pollution prevention/good housekeeping techniques into activities not directly related to stormwater management, such as park and open space maintenance, fleet and building maintenance, and new construction and land disturbances. See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-36.

and other interim milestones. Such an effort will ensure compliance with the terms and conditions of the General Permit, Massachusetts stormwater regulations and the CWA.

Any additional comments regarding Cambridge's Annual Report are provided below:

- Cambridge's Annual Report in regard to Control Measure #1 evidences a good faith effort to implement this control measure. The City's education program is quite strong. One area that could be improved, as noted by the Center for Watershed Protection in 1999, is the targeting of specific businesses for education, such as gas stations and auto shops on proper site management of hydrocarbon runoff. Cambridge could also improve its educational programs by establishing percentage-based compliance targets, as recommended by EPA. See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

- Cambridge's Annual Report in regard to Control Measure #2 evidences significant progress toward the effective implementation of this control measure. The Report details active programs in several recommended and required areas, including the holding of public meetings.

- Cambridge's Annual Report in regard to Control Measure #3 evidences a good faith effort to implement this control measure. The Report details active programs in several recommended and required areas, including the development of stormwater mapping, IDDE regulations, outfall inspections and water quality monitoring. The City included water quality sampling results with its Annual Report. While the City of Cambridge has clearly demonstrated its commitment to implementing this control measure, the City could improve its IDDE programs by establishing percentage-based compliance targets, as recommended by EPA. See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

- Cambridge's Annual Report in regard to Control Measure #4 evidences the City's eventual commitment to implementing this control measure. We recognize that the City did not commit to developing and implementing this program in the early years of the permit terms. The City schedule may ultimately comply with the terms and conditions of the General Permit. However, we recommend that the City accelerate its plans to develop and implement its construction site runoff program. EPA recommends that the ordinance or other regulatory mechanism be in place by PY1, so that site inspections, water quality testing and other enforcement procedures can be implemented prior to 2008. [45]

- Cambridge's Annual Report in regard to Control Measure #5 evidences a good faith effort to implement this control measure. We recognize that the City did not commit to developing and implementing this program in the early years of the permit terms. The

[45] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32. The General Permit requires the development, implementation *and enforcement* of a construction site runoff ordinance or regulation. Cambridge must be in position to site inspect with procedures to "incorporate consideration of potential water quality impacts" as required by Part II.B.4.e of the General Permit.

City schedule may ultimately comply with the terms and conditions of the General Permit. However, we recommend that the City accelerate its plans to develop and implement its post construction site runoff program. As drafted, the SWMP does not present the final post construction runoff regulation, guidance and monitoring program to the City Council for approval until the last year of the permit term. As discussed in our analysis of the NOI, this schedule leaves no room for error. We encourage Cambridge to begin the process of adopting post construction control strategies, particularly an ordinance and site plan review procedures, as soon as possible.

- Cambridge's Annual Report in regard to Control Measure #6 evidences a good faith effort to implement this control measure. The Report evidences planned programs in several key areas, including employee training and inspection of existing controls. The pollution prevention/good housekeeping program could be improved by adding several BMPs and identifying measurable goals for each BMP. As discussed above, EPA recommends that municipalities identify percentage-based compliance goals for its pollution prevention/good housekeeping programs, such as targeted reductions in pesticide use and/or road salt use. According to its Annual Report, Cambridge has conducted several catch basin and stormdrain maintenance projects. We urge the City to continue and expand such programs. The City should adopt (or report, if existing) formal pesticide and salt use reduction strategies and street and catch basin cleaning programs with specific compliance goals to enable EPA and/or DEP to gauge program effectiveness and permit compliance.

While municipalities have until the expiration of the first permit term (2008) to implement all elements of its Phase II SWMP, permittees must comply with the interim requirements of Phase II. These requirements include the establishment of effective BMPs and measurable goals (including, where appropriate, interim milestones) for each BMP,[46] and the submission of Annual Reports detailing ongoing implementation of its BMPs and compliance with its measurable goals.[47] Based on the information provided in its Annual Report, Cambridge has made significant progress toward the implementation of its SWMP and has taken its obligations to provide annual reports very seriously. We encourage the City to make the improvements discussed above for the purposes of creating a model SWMP.

[46] 40 CFR 122.34(d)(1).
[47] General Permit, Part II.F

TOWN OF DEDHAM

The Dedham MS4 discharges into at least three impaired waterbodies, including the Charles River, the Neponset River and Mother Brook. Listed impairments for Mother Brook include organic enrichment/low DO, pathogens, nutrients and taste, odor and color.[48] Listed impairments for the Neponset River include priority organics, metals, organic enrichment/low DO, pathogens, nutrients, suspended solids, siltation and turbidity. Listed impairments for this section of the Charles River include priority organics, organic enrichment/low DO, pathogens, nutrients, and turbidity. The entire length of this section of the Charles is "non-support" for fish consumption, due to PCB contamination, and primary contact, due to elevated levels of fecal coliform.[49] Wet weather sampling was conducted at twelve stations in this segment of the Charles River with fecal coliform levels ranging from 20 cfu/100 mL to 78,000 cfu/100 mL.[50] Secondary contact uses are impaired because of elevated bacteria levels during storm events.[51] All of the impairments listed above are associated with stormwater. Clearly, as Dedham is discharging into waters already severely damaged by stormwater, with no assimilative capacity, it is imperative that an effective program be implemented in a timely manner.

As discussed above, Section IX of the General Permit requires that the permittee identify discharges to impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. Dedham does not do so. Further, Dedham does not identify how it will specifically control "pollutants of concern" into water bodies impaired by those pollutants as required by Part I.C.2 of the General Permit. As explained above, Dedham has an affirmative duty to show that its program will ensure compliance with WQS. Dedham has not done so. Further, the NOI is neither specific enough to provide measurable goals nor aggressive enough to ensure compliance with water quality standards by the spring of 2008. See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

Assessment of Dedham NOI & Annual Report

Eggleston Environmental provides a critical analysis of the Town of Dedham's Notice of Intent (NOI) and Annual Report pursuant to Dedham's eligibility to discharge under Phase II of the National Pollutant Discharge Eliminations System (NPDES); see Attachment II.[52] In general, there are several elements of Dedham's NOI and SWMP (as reflected by its Annual Report) that must be addressed in order to ensure compliance with the terms and conditions of the General Permit, Massachusetts stormwater regulations and the CWA:

- The Town of Dedham does not identify effective measurable goals for each selected BMP in the NOI. The EPA has determined that measurable goals are ". . . BMP design objectives or goals that *quantify* the progress of program implementation and the performance of your BMPs. They are objective markers or milestones that you (and the

[48] Proposed Massachusetts Year 2004 Integrated List of Waters, April 2004, p. 83.
[49] http://www.mass.gov/dep/brp/wm/wqa/72wqar3.doc; see p. 56.
[50] *Id*. at p. 57.
[51] *Id.*
[52] See Attachment II.

permitting authority) will use to track the progress and effectiveness of your BMPs in reducing pollutants to the MEP."[53] The EPA has provided "appropriate measurable goals" as guidance for each of the six required control measures in their "Stormwater Phase II Compliance Assistance Guide" published in March 2000, most of which include percentage-based compliance targets.[54] Only in a few cases does the Town of Dedham identify specific measurable goals. More often, the Town establishes general terms, such as "develop town standards" (BMP 4-b) or "regulate subdivision runoff" (BMP 5-c). The Town must make more of an effort to provide measurable goals for existing and future program activity to enable EPA and/or DEP to enforce the Phase II SWMP requirements, and to ensure compliance with 40 C.F.R. §122.34(d)(1).

- The Town has not developed an ordinance or other regulatory mechanism to prohibit non storm water discharges into the stormwater system, and implement appropriate enforcement procedures and actions. We have reviewed Dedham's "Stormwater Management By-Law". The By-Law does not establish an illicit discharge prohibition and enforcement program. In fact, the By-Law specifically notes that "[a]fter public notice and public hearing, the Dedham Conservation Commission may promulgate rules and regulations to effectuate the purposes of this By-Law."[55] The purpose of the By-Law is "to allow the Town to establish rules and regulations; application and review procedures; a permitting process; and enforcement procedures and sanctions to allow it to comply with all applicable Federal and State statutes . . . ."[56] EPA recommends that the IDDE ordinance or regulation be developed in PY1, and be in place in PY2.[57] There is no evidence in the NOI or Annual Report to suggest that the Town of Dedham has begun this process.

- The Town has not developed an erosion and sedimentation control regulation and/or ordinance. In its 1999 analysis of the Dedham SWMP, the Center for Watershed Protection (CWP) recommends that the Town adopt an erosion and sediment control ordinance. Part II.B of the General Permit requires the development, implementation and enforcement of "an ordinance or other regulatory mechanism to require sediment and erosion control at construction sites," and "to address post construction runoff from new development and redevelopment." We have reviewed Dedham's "Stormwater Management By-Law." We commend the program for encompassing all major potential discharges to stormwater systems in Dedham. However, the By-Law does not establish an erosion and sedimentation control regulation designed to reduce stormwater pollution.

[53] See http://cfpub.epa.gov/npdes/stormwater/measurablegoals/part2.cfm; (emphasis added). The EPA further states, "EPA recommends that you develop a program with a variety of short- and long-term goals. At a minimum, your measurable goals should contain descriptions of actions you will take to implement each BMP, what you anticipate to be achieved by each goal, and the frequency and dates for such actions to be taken. Also, EPA recommends that you use your BMPs and measurable goals to help establish a baseline against which future progress at reducing pollutants to the MEP can be measured. For example, information on current water quality conditions, numbers of BMPs already implemented, and the public's current knowledge/awareness of storm water management would be useful in setting this baseline."
[54] See http://www.epa.gov/npdes/pubs/comguide.pdf.
[55] Dedham "Stormwater Management By-Law", Section 5.
[56] Dedham "Stormwater Management By-Law", Section 1.
[57] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-29.

In fact, the By-Law specifically notes that "[a]fter public notice and public hearing, the Dedham Conservation Commission may promulgate rules and regulations to effectuate the purposes of this By-Law."[58] There is no evidence in the NOI or Annual Report to suggest that the Town of Dedham has begun this process.

- In order to comply with the Phase II rules, Dedham must ensure that all public involvement activities (re: minimum control measure #2) comply with state public notice requirements at MGL Chapter 39 Section 23B and local public notice requirements.[59] This requirement includes the condition that "the permittee . . . provide opportunity for the public to participate in the implementation and review of the storm water management program."[60] The Town of Dedham does not provide the opportunity for the public to participate in the implementation and review of the SWMP, and its NOI fails to identify a BMP for this requirement or a measurable goal for its implementation.

While municipalities have until the expiration of the first permit term (2008) to implement all elements of its Phase II SWMP, permittees must comply with the interim requirements of Phase II. These requirements include the establishment of effective BMPs and measurable goals (including, where appropriate, interim milestones) for each BMP,[61] and the submission of Annual Reports detailing ongoing implementation of its BMPs and compliance with its measurable goals.[62] Based on the information provided in its NOI and Annual Report, Dedham must accelerate the development of many critical program areas to ensure compliance with the terms and conditions of the General Permit, including the development, implementation and enforcement of erosion and sedimentation, and IDDE ordinances. In the interim period, the Town must amend its program to include required public notice and hearing procedures, and effective measurable goals for each selected BMP. We urge the Town of Dedham to incorporate these changes to its SWMP as soon as possible.

[58] Dedham "Stormwater Management By-Law", Section 5.
[59] General Permit, Part II(B)(2).
[60] General Permit, Part II(B)(2)(a).
[61] 40 CFR 122.34(d)(1).
[62] General Permit, Part II.F

TOWN OF NEEDHAM

Five major waterbodies in Needham are impaired due to turbidity, priority organics, nutrients, organic enrichment/low DO, pathogens, and noxious aquatic plants, including two segments of the Charles River (MA72-06 and MA72-07) and three tributaries (Fuller Brook, Rosemary Brook and Alder Brook). Fecal coliform levels were high for all five of the Needham segments, with the highest levels reported in MA72-07 ranging from 20cfu/100 mL to 78,000 cfu/100 mL during wet weather conditions. Dissolved oxygen issues were also common among all five segments (as low as 3.9mg/L or 42% saturation in Rosemary Brook, which receives 36 outfalls from the Town of Needham), as were elevated levels of nutrients, particularly phosphorus (as high as .21 mg/L measured in Charles River segment MA72-06). Chlorophyll concentrations ranged from 1.2 to 50.3 µg/L in Charles River segment MA72-06. Finally, in MA72-07, elevated levels of PCB were found in carp and elevated concentrations of pesticides, heavy metals, and/or PCM measurements were found in the sediments.

As discussed above, Section IX of the General Permit requires that the permittee identify discharges to impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. Needham does not do so. Further, Needham does not identify how it will specifically control "pollutants of concern" into water bodies impaired by those pollutants as required by Part I.C.2 of the General Permit. As explained above, Needham has an affirmative duty to show that its program will ensure compliance with WQS. Further, the NOI is neither specific enough to provide measurable goals nor aggressive enough to ensure compliance with water quality standards by the spring of 2008. See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

Assessment of Needham NOI

Public Education (Minimum Control Measure #1)

Needham's existing and proposed BMPs for Control Measure #1 ("Public Education") meet the requirements of the General Permit and state regulations for NOIs. Title 40 C.F.R. §122.34(d)(1) requires that all NOIs include measurable goals, including, where appropriate, specified target months and years for implementation, interim milestones, and frequency of action.[63] As such, EPA provides four (4) "Appropriate Measurable Goals" for compliance with the requirements of Minimum Control Measure #1, two of which identify specific percentage-based compliance goals to gauge the effectiveness of public education programs.[64] Needham does commit to specific achievements in the measurable goals provided for BMPs 1-1 through 1-3, and has included enough

[63] See 40 C.F.R. §122.34(d)(1) ("In your permit application (either a notice of intent for coverage under a general permit or an individual permit application), you must identify and submit to your NPDES permitting authority the following information . . . (i) The best management practices (BMPs) that you or another entity will implement for each of the storm water minimum control measures at paragraphs (b)(1) through (b)(6) of this section; [and], (ii) The measurable goals for each of the BMPs including, as appropriate, the months and years in which you will undertake required actions, including interim milestones and the frequency of the action.").

[64] U.S. EPA "Stormwater Phase II Compliance Assistance Guide," (March 2000), p. 4-22 (e.g. "[a] certain percentage of restaurants no longer dumping grease and other pollutants down storm sewer drains" or "[a] certain percentage reduction in litter or animal waste detected in discharges.").

information for these BMPs to enable EPA and/or DEP gauge program effectiveness. [65] However, the Town could improve its program to include percentage-based compliance goals, as recommended by EPA. We recommend that Needham identify percentage-based compliance goals to ensure compliance with the conditions of the General Permit. As pointed out by the Center for Watershed Protection (CWP) in its analysis of Needham's SWMP, public participation is particularly important; given that Needham is largely built out, most significant load reductions would occur via changes in public behavior patterns.

Public Participation (Minimum Control Measure #2)

Needham's public participation program establishes the necessary BMPs and measurable goals to comply with the conditions established by the General Permit and state regulations for NOIs. The Town submits several of the BMPs recommended by EPA for this control measure (e.g. Adopt-A-Stream, Storm Drain Stenciling) and provides sufficient information in its measurable goals to enable EPA and/or DEP to gauge program effectiveness and ensure permit compliance. [66] Three areas that could be improved include: (1) the adoption of a community cleanup program; (2) the adoption of a community watch program that utilizes existing neighborhood groups to improve SWMP oversight; (3) the establishment of percentage-based compliance goals. EPA's Phase II compliance assistance guide provides recommended measurable goals for implementation of this control measure that specify a "certain percentage" of community participation in community cleanups, neighborhoods covered by watch groups, and population sectors reached by public outreach programs.[67] EPA also recommends that permittees adopt an aggressive public participation program as an element of their SWMP.[68] Adopting these recommended programs would achieve that goal and ensure compliance with the conditions of the General Permit for this control measure.

Illicit Discharge Detection and Elimination (Minimum Control Measure #3)

Needham has identified for implementation or implemented several of the required elements for control measure #3 as part of its compliance with a Consent Order and Memorandum of Understanding (MOU) entered into with U.S. EPA in 1996, including the development of a storm sewer system map and a plan to detect and address non-storm water discharges into the storm water system.[69] However, it is unclear from the information provided whether Needham IDDE programs include an ordinance or other regulatory mechanism that completely

[65] See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000) ("[m]easurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness.").

[66] See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000) ("[m]easurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness.").

[67] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-24.

[68] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-22 ("EPA believes that the public can provide valuable input and assistance to a regulated small MS4's municipal storm water management program and, therefore, suggests that the public be given opportunities to play an active role in both the development and implementation of the program.").

[69] See Town of Needham "Phase II Storm Water Management Plan," BETA Group, Inc. (July 2003), p. 1-6.

prohibits all non-storm water discharges, including but not limited to illegal discharges, with appropriate enforcement procedures and actions. [70] If the IDDE ordinance or bylaw has not been formalized, with the necessary input from the public, we recommend that Needham initiate this process immediately. The Massachusetts Attorney General's guidance for municipalities adopting stormwater bylaws states that "(i)t is a good idea to adopt the bylaws as soon as practical . . . [t]he process from the drafting of a bylaw through its final adoption is lengthy."[71] In addition, the measurable goals established for BMPs 3-2 and 3-3 do not provide sufficient information to allow EPA and/or DEP to gauge program effectiveness and permit compliance. Needham identifies the need to provide specific information (i.e. by providing information such as "# of education tools distributed"), but does not actually provide that information.[72] EPA recommends that the NOIs contain the following measurable goals for compliance with control measure #3: "Ordinance in place; training for public employees completed; a certain percentage of sources for illicit discharges determined [PY2]. . . . A certain percentage of: illicit discharges detected, illicit discharges eliminated; and households participating in quarterly household hazardous waste special collection days [PY3]. . . . Most illicit discharge sources detected and eliminated [PY4]."[73] Needham should amend its NOI to include any information not disclosed that might have been achieved as part of its compliance with the Consent Order and MOU, as well as information required by state regulations, including measurable goals for each BMP as required by 40 CFR 122.34(d)(1).

Construction Site Runoff Control (Minimum Control Measure #4)

While Needham has clearly identified the need for a "construction site stormwater runoff control" program (see BMPs 4-1, 4-2), based on the measurable goals submitted in its NOI it is unclear whether the necessary components of the program will be implemented. Specifically, the need to develop an overarching construction runoff policy is identified (BMP 4-1)), but no milestones or other measurable goals for developing the policy are identified. The need for construction site inspection is identified (BMP 4-2), but the Town does not provide sufficient information in its measurable goals to enable EPA and/or DEP to gauge program effectiveness and permit compliance. EPA has determined that an "appropriate measurable goal" for this control measure is to have the ordinance or other regulatory mechanism in place by PY1.[74] EPA has further determined that it would be appropriate to implement site inspection procedures by PY2, with a certain percentage rate of compliance among construction operators.[75] Needham has not provided this type of information for its measurable goals. While we recognize that Needham has devoted substantial resources toward the development of an effective SWMP, Title 40 C.F.R. §122.34(d)(1) requires that all NOIs include measurable goals for each BMP, including,

[70] General Permit, Part II(B)(3).
[71] http://www.ago.state.ma.us; Adoption of Local Stormwater Bylaws at 4.
[72] See Needham's NOI, Section D, p. 5 of 8.
[73] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-29.
[74] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32.
[75] *Id*.

where appropriate, specified target months and years for implementation, interim milestones, and frequency of action. We note also that CWP recommended that the Town should provide incentives to reduce clearing and grading on a site and to use grading techniques that minimize the amount of soil disturbed. Furthermore, CWP also recommended that an erosion control plan should be required and should contain, among other things, location and type of controls being used, supporting design calculations, limits of disturbance, required buffers and setbacks, and construction schedule. In order to ensure compliance with state regulations and the General Permit, Needham should amend its NOI to include BMPs for the development, implementation and enforcement of a construction runoff control program, including the identification of measurable goals for each BMP.

Post Construction Runoff Control (Minimum Control Measure #5)

Needham has not identified sufficient measurable goals for the implementation and effective operation of a post-construction stormwater management program. Specifically, the measurable goals submitted pursuant to BMPs 5-1, 5-2 identify the general program requirements for this control measure, but fail to identify any specific goals, procedures or strategies for implementing these goals, or sufficient information to enable EPA/DEP to gauge permit compliance and program effectiveness.[76] 314 CMR 3.02 defines BMPs as "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the Commonwealth. BMPs include treatment requirement, operating procedures, structures, devices, and/or practices to control plant site runoff, spillage, or leaks, sludge or waste disposal, or drainage from raw material storage." As discussed above, Phase II requires MS4 operators to identify BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action."[77] EPA has determined that "appropriate" measurable goals for this control measure include the identification of specific compliance goals, such as "reduced percent of new impervious surfaces associated with new development projects," and "improved clarity and reduced sedimentation of local waterbodies."[78] NOIs from other municipalities in the lower Charles River watershed provide interim goals for the development and implementation of post construction runoff controls and the enforcement and maintenance of the program.[79] As currently drafted, Needham's NOI does not provide sufficient information to comply with these program requirements, and its post construction runoff program does not meet the standard established by these municipalities, the General Permit or state regulations

Pollution Prevention/Good Housekeeping (Minimum Control Measure #6)

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[76] "Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness." See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000).

[77] 40 C.F.R. §122.34(d)(1).

[78] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-35.

[79] See Town of Wellesley's NOI.

The "pollution prevention and good housekeeping" minimum control measure requires *both* MS4 maintenance (including inspection) and pollution prevention (e.g. programs to promote litter reduction, proper animal waste disposal, reductions in pesticide use, reductions in salt use and runoff from salt storage sites, etc. are EPA-recommended BMPs). In general, Needham's maintenance procedures are good, particularly in regard to drain pipe inspection, cleaning and replacement (BMPs 6-3, 6-4, 6-5). Needham has established effective measurable goals for each BMP, with the exception of BMPs 6-1 and 6-7 (which should be amended to include more specific measurable goals). One area that must be addressed is the Town's failure to provide a BMP for employee training on how to incorporate pollution prevention/good housekeeping techniques into municipal operations.[80] Needham should also establish BMPs and measurable goals for the reduction of road salt and pesticide use, and improved waste reduction/recycling participation by Needham residents.[81] Further, we note other useful recommendations made by CWP, including purchasing a vacuum street sweeper to be used in tandem with the other two sweepers in order to remove the fine-grained materials that carry the majority of the pollutant load, and ensuring adequate treatment of melt water from the snow storage area. Such efforts will ensure compliance with the conditions of the General Permit and state regulations for this control measure.

Assessment of Needham Annual Report

While the Town of Needham's May 4, 2004 Annual Report evidences progress in several areas of the NOI, other critical areas require substantial improvement in order to ensure compliance with the General Permit and WQS. Needham's implementation of BMPs for the first two of six minimum control measures is generally good. However, the City's implementation of control measure three, four and five (IDDE, construction runoff control, post construction runoff control) is insufficient. Newton must, through an ordinance or other regulatory mechanism, establish a prohibition on non-storm water discharges into the MS4, and implement appropriate enforcement procedures and actions.[82] EPA recommends that the ordinance or regulation be developed in PY1, and be in place in PY2.[83] It remains unclear whether Needham has an IDDE ordinance in place that meets the requirements of Phase II. Similarly, Needham has not made significant progress toward implementing an enforceable regulation for construction site stormwater runoff or post-construction runoff. As such, Needham's SWMP, while progressing in some areas, lacks the central mechanism required for implementation and enforcement. In order to ensure compliance with the WQS by 2008, the Town of Needham will have to accelerate its efforts to develop, implement and enforce minimum control measures three through five.

It is also evident from the Annual Report that the Needham is in ongoing non-compliance with the General Permit due to its failure to establish adequate measurable goals in the NOI. Measurable goals are a critical and required element of any Phase II SWMP implementation

[80] As required by Part II.B.6.a of the General Permit.
[81] As discussed, such programs are recommended BMPs for this control measure.
[82] See General Permit, Part II(B)(3).
[83] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-29.

plan, and are necessary to allow EPA and/or DEP to gauge permit compliance and program effectiveness, and ensure compliance with the Clean Water Act.[84] Additional comments regarding Needham's SWMP, as evidenced by its Annual Report, include:

- Needham has made good progress toward the implementation of its Public Education and Outreach programs.

- Needham should establish measurable goals for its Adopt-A-Stream program for upcoming permit years (BMP# 2-1). Needham did not meet the measurable goals established for its storm drain stenciling program (BMP# 2-2). If Needham intends to change its measurable goals for this BMP, it should submit new measurable goals to enable EPA and/or DEP to gauge program effectiveness and permit compliance. Needham has made good progress toward establishing a storm water committee.

- Needham did not meet the measurable goals established for its outfall testing program as part of its IDDE program (BMP# 3-1). Needham should accelerate the implementation of this element of the program to ensure compliance with the General Permit. Needham has not established measurable goals for its IDDE education program (BMP# 3-2), and has not made significant progress toward the implementation of this program. Needham must establish measurable goals for this BMP and accelerate implementation of the program.

- Needham must accelerate the adoption of a construction site runoff control policy, bylaw or ordinance (BMP# 4-1) so that it can initiate an effective site inspection/construction review program (BMP# 4-2). To date, according to its Annual Report, Needham has not conducted site inspections aside from the two sites reported as non-compliant.

- Needham has not met the measurable goals established for its post construction runoff control BMPs. According to its NOI, the development of a post construction runoff control policy and BMP inspection and maintenance was to begin in PY1 (Fall 2003). According to the Annual Report, Needham has not made progress toward the development, implementation and enforcement of this control measure.

- As discussed in the comments above, Needham has designed a potentially effective pollution prevention/good housekeeping program. However, the Annual Report evidences a failure to implement this program. Needham must provide in its Annual Report both an assessment of the progress towards achieving the measurable goals and a discussion of activities for the next reporting cycle for each BMP.[85] Needham fails to provide such information for BMPs 6-3, 6-4, 6-5, 6-6, and 6-7 in violation of the General Permit. Needham must provide such information to remain in compliance with Phase II

[84] 40 C.F.R. §122.34(d)(1). Phase II requires operators to identify BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action." *See also* "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000) ("Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness.")
[85] See General Permit, Part II.F.2.a-g.

requirements on a year-to-year basis during the first permit term. The Town should immediately provide this information to EPA and DEP.

While municipalities have until the expiration of the first permit term (2008) to implement all elements of its Phase II SWMP, permittees must comply with the interim requirements of Phase II. These requirements include the establishment of effective BMPs and measurable goals (including, where appropriate, interim milestones) for each BMP,[86] and the submission of Annual Reports detailing ongoing implementation of its BMPs and compliance with its measurable goals.[87] Based on the information provided in its Annual Report, Needham must improve program development, implementation and reporting to establish compliance with the General Permit, state regulations and the CWA.

[86] 40 CFR 122.34(d)(1).
[87] General Permit, Part II.F

CITY OF NEWTON

The Newton MS4 discharges into six impaired waterbodies; the Charles River, Cheesecake Brook, South Meadow Brook, Saw Mill Brook, Hammond Pond, and Bulloughs Pond. The NOI states that Hammond Pond and Bulloughs Pond are impaired for pollutants associated with stormwater, namely noxious aquatic plants and nutrients. The NOI lists the Charles as impaired for priority organics and pathogens. However, according to DEP's Charles River Watershed 1997/1998 Water Quality Assessment Report, Segments MA72-24, MA72-29, MA72-30 are impaired for siltation, turbidity, taste, color and odor, nutrients, organic enrichment/low DO, pathogens, oil and grease, and priority organics as well. Fecal coliform bacteria levels were high in all segments (200 to 3600 cfu/100 mL in MA72-24, 340 and 4,000 cfu/100 mL in MA72-29, and ranged between 20 and 6,000 cfu/100 mL in MA72-30). In MA7-24, there were dissolved oxygen levels as low as 3.6 mg/L (35% saturation). Elevated nutrient levels were also found in all three segments, with segment MA72-24 having the highest levels of ammonia-nitrogen (0.26mg/L) and phosphorus (0.20mg/L). Further, segment MA72-29 had high chlorides and conductivity measurements, massive amounts of sedimentation, and complete channelization, reduction/elimination of the riparian zone. All of these pollutants are associated with stormwater. Clearly, as Newton is discharging into waters already severely damaged by stormwater, with no assimilative capacity, it is imperative that an effective program be implemented in a timely manner.

Section IX of the General Permit requires that the permittee identify discharges to impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. Newton does not do so. Further, Newton does not identify how it will specifically control "pollutants of concern" into water bodies impaired by those pollutants as required by Part I.C.2 of the General Permit. As explained above, Newton has an affirmative duty to show that its program will ensure compliance with WQS. Newton has not fulfilled its obligation. Furthermore, the NOI itself is neither specific enough to provide measurable goals nor aggressive enough to ensure compliance with water quality standards by the spring of 2008.[88] See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

Assessment of Newton NOI

Public Education (Minimum Control Measure #1)

While Newton identifies several general goals for implementing the "public education" control measure, its "measurable goals" are too general to enable EPA and/or DEP to gauge the effectiveness of program implementation.[89] For example, BMP #1.6 is

[88] For example, Newton often utilizes the "Specify Measurable Goal" field in the NOI to provide a general description of the respective BMP. See 40 C.F.R. §122.34(d)(1) ("In your permit application (either a notice of intent for coverage under a general permit or an individual permit application), you must identify and submit to your NPDES permitting authority the following information . . . (i) The best management practices (BMPs) that you or another entity will implement for each of the storm water minimum control measures at paragraphs (b)(1) through (b)(6) of this section; [and], (ii) The measurable goals for each of the BMPs including, as appropriate, the months and years in which you will undertake required actions, including interim milestones and the frequency of the action.")

[89] See 40 C.F.R. §122.34(d)(1) [previous note].

"Explore Partnering with Schools" and identifies "Explore Education Programs" as its measurable goal. In Section F of the NOI ("Storm Water Management Program Time Frames"), Newton commits to exploring education programs during the spring quarter of PY1-PY5. However, Newton fails to establish milestones for this program, or even when the program will be fully implemented. Several other BMPs also fail to establish milestones, including BMP #1.5, #1.7 and #1.8. While Newton's "public education" goals are exemplary, neither EPA nor DEP can enforce their implementation absent the identification of measurable goals, as required by 40 C.F.R. §122.34. In its 1999 analysis of the Newton SWMP, the Center for Watershed Protection noted that because Newton is largely developed, and space for structural BMPs is limited, changes in public behavior patterns would most likely yield the greatest reductions in pollutant load. The Center also pointed out the importance of targeting commercial and industrial communities. We too encourage Newton to prioritize these elements of their SWMP.

Public Participation (Minimum Control Measure #2)

Newton again identifies several general goals for implementation of the "public participation" control measure, which, if implemented, would effectively comply with the MS4 program requirements. However, on many occasions Newton fails to establish measurable goals to enable EPA and/or DEP to gauge the effectiveness of program implementation and ensure compliance with the Clean Water Act. For example, BMP #2.4 ("Explore Volunteer Organizations, Watch Groups") cites "[o]bserve outfalls, find illicit discharges, stream clean up" as its measurable goal, but does not establish interim milestones, months or years for accomplishing these tasks. Section F of the NOI ("Storm Water Management Program Time Frames") appears to indicate that Newton will begin seeking the help of volunteer groups in Fall 2003, but does not specify any specific program goals or milestones before termination of the 5-year permit period.[90] EPA's Phase II compliance assistance guide provides recommended measurable goals for implementation of this control measure that specify a "certain percentage" of community participation in community cleanups, neighborhoods covered by watch groups, and population sectors reached by public outreach programs.[91] Newton does not provide a similar level of information. Measurable goals cannot serve their desired purpose[92] without measurable characteristics.

Illicit Discharge Detection and Elimination (Minimum Control Measure #3)

Newton must develop, implement and enforce a program to both detect and eliminate illicit discharges into the storm water system.[93] However, the City has failed to establish measurable goals necessary to gauge the effectiveness of the implementation and operation of the program. The NOI states that it plans to

[90] We recognize that the City of Newton has made significant progress in this area, as evidenced by its April 2004 Annual Report. However, the NOI must still provide measurable goals to comply with the CWA, the Regulation and the General Permit.

[91] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-24.

[92] "Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness." See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000).

[93] General Permit, Part II(B)(3).

"explore detection and elimination efforts" by "observ[ing] major outfall discharges." This BMP (# 3.9), even if implemented, does not meet the standard established by the General Permit or EPA regulations for this control measure (i.e. more than exploration is required). In addition, Newton does not provide interim milestones, month or years for achieving the requirements of this control measure, as required by 40 C.F.R. §122.34. In numerous other cases for this control measure, Newton fails to establish measurable goals.[94] Newton must adopt an ordinance or other regulatory mechanism, if one does not already exist, to enforce the IDDE program; however, the only measurable goal provided by Newton for this requirement is a general plan to "Explore adaptation of Stormwater Ordinance/Reg." The Massachusetts Attorney General's guidance for municipalities adopting stormwater bylaws states that "(i)t is a good idea to adopt the bylaws as soon as practical . . . [t]he process from the drafting of a bylaw through its final adoption is lengthy."[95] In addition, Newton has not implemented or targeted for implementation a program to educate businesses and the general public about the hazards associated with illegal discharges and improper disposal of waste, as required by the Phase II program.[96]

Construction Site Runoff Control (Minimum Control Measure #4)

While Newton has identified the need for a "construction site stormwater runoff control" program, the City has not identified measurable goals necessary for the implementation and operation of such a program. Specifically, the need for a site inspection program is identified (BMP #4.3), but no milestones or other measurable goals for implementing the program are identified. The need for citizen input is identified, but the information submitted for measurable goals is "ensure citizen review procedures for Constr > 1 acre."[97] Indeed, Newton has not even begun the process of adopting an ordinance or other regulation to enforce the program.[98] EPA has determined that an "appropriate measurable goal" for this control measure is to have the ordinance or other regulatory mechanism in place by PY1.[99] EPA has further determined that it would be appropriate to implement site inspection procedures by PY2, with a certain percentage rate of compliance among construction operators.[100] Newton has not implemented, nor targeted for implementation, these or similar measurable goals; as such, Newton has failed to identify sufficient measurable goals to gauge permit compliance and program effectiveness in upcoming years and months.

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[94] In fact, Newton often utilizes the "Measurable Goals" field to further explain the BMP, not define measurable goals to implement it. For example: BMP #3.7: train employees; measurable goal: employees help identify illicit discharges. BMP #3.3: locate and inspect all outfalls; measurable goal: collect outfall data for Hansen Database.

[95] http://www.ago.state.ma.us; Adoption of Local Stormwater Bylaws at 4.

[96] General Permit, Part II(B)(3)(d); see also "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-26.

[97] These controls are required by 40 C.F.R. §122.34(B)(4)(ii).

[98] BMP #4.1 makes only a general commitment to "[e]xplore adaptation of Constr. Site Runoff Ordinance/Reg," and Section F of the NOI indicates that such exploration with continue throughout PY2, but does indicate when or how the program will be implemented.

[99] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32.

[100] *Id*.

Post Construction Runoff Control (Minimum Control Measure #5)
Newton has not identified measurable goals for the implementation and effective operation of a post-construction stormwater management program. Specifically, the measurable goals submitted pursuant to BMPs #5.1-5.4 commit Newton to the general exploration of control measures that must be developed, implemented and enforced in order to ensure compliance with the Clean Water Act and the General Permit.[101] While Newton identifies some important program goals for the effective operation of a post-construction stormwater management program in BMPs #5.6-5.10, the City fails to identify any specific goals, procedures or strategies for implementing these goals, or sufficient information to enable EPA/DEP to gauge permit compliance and program effectiveness.[102] As discussed, Phase II requires operators to identify BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action."[103] The NOI also fails to identify procedures to ensure long-term operation and maintenance of controls, as required by Phase II.[104]

Pollution Prevention/Good Housekeeping (Minimum Control Measure #6)
The "pollution prevention and good housekeeping" minimum control measure requires *both* MS4 maintenance (including inspection) and pollution prevention (e.g. programs to promote litter reduction, proper animal waste disposal, reductions in pesticide use, reductions in salt runoff from salt storage sites, etc. are EPA-recommended BMPs). In general, Newton's maintenance procedures are good (see BMPs #6.6-6.10), although the City's maintenance program should be strengthened to include specific maintenance program goals.[105] However, Newton's pollution prevention and inspection programs fail to identify sufficient measurable goals, procedures or strategies for implementing these programs, or the necessary information to enable EPA/DEP to gauge permit compliance and program effectiveness in these particular areas. For example, the only measurable goal established for BMP # 6.2 ("Develop Stormwater Pollution Prevention Plan") is "develop spill prevention control proc[edures], pollution reduction." EPA recommends that MS4 operators complete their pollution prevention plan in PY1, with measurable implementation into MS4 operations and maintenance in PY3.[106] While Newton indicates that it plans to develop the program at the conclusion of PY1[107], there are no measurable goals provided for implementation and ongoing operation. Implementation of an effective pollution prevention program must occur for the City of Newton to remain in compliance with the Clean Water Act and the General Permit. Newton must

[101] See General Permit, Part II(B)(5).
[102] "Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness." See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000).
[103] 40 C.F.R. §122.34(d)(1).
[104] 40 C.F.R. §122.34(b)(5).
[105] E.g. by setting a target compliance rate with maintenance schedules, as recommended by the "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-37.
[106] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-37.
[107] See NOI, Section F, BMP #6.2.

immediately accelerate the development and implementation of this program, and submit measurable goals to EPA/DEP, to maintain compliance with the General Permit.

Newton's failure to establish measurable goals for each minimum control measure violates Part II(A)(5) of the General Permit.

Assessment of Newton Annual Report

While the City of Newton's April 30, 2004 Annual Report evidences significant progress in several areas of the NOI, other critical areas require substantial improvement in order to ensure compliance with the General Permit and WQS. Newton's implementation of BMPs for the first two of six minimum control measures is generally good, especially regarding public involvement and participation (BMPs # 2.1-2.6).[108] However, the City's implementation of control measure three of six (illicit discharges) is insufficient. Newton must, through an ordinance or other regulatory mechanism, establish a prohibition on non-storm water discharges into the MS4, and implement appropriate enforcement procedures and actions.[109] EPA recommends that the ordinance or regulation be developed in PY1, and be in place in PY2.[110] According to the Annual Report, Newton has not begun the process. Further, the City has not established measurable goals for developing and implementing the illicit discharge program in the future.[111]

Newton's Annual Report evidences a similar lack of progress in regard to the process of developing, implementing and enforcing regulations for minimum control measures four, five and six: Newton has made neither significant progress nor established measurable goals toward implementing an enforceable regulation for construction site stormwater runoff, post-construction runoff, or stormwater pollution prevention.[112] As such, Newton's storm water management program, while progressing in some areas, lacks the central mechanism required for implementation and enforcement. In order to ensure compliance with the WQS by 2008, the City of Newton will have to accelerate its efforts considerably. It is also evident from the Annual Report that the City of Newton is in ongoing non-compliance with the General Permit due to its failure to establish adequate measurable goals in the NOI. Measurable goals are a critical element of any SWMP implementation plan, and are necessary to allow EPA and/or DEP to gauge permit compliance and program effectiveness, and ensure compliance with the Clean Water Act.[113]

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[108] With the notable exception of BMPs # 1.5-1.7 for which there has been no progress to date.
[109] See General Permit, Part II(B)(3).
[110] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-29.
[111] Newton reports "no action to date" in regard to its initial exploration of a stormwater ordinance and/or regulation (BMP #3.4), indicating only that the issue will be "discussed" at the Stormwater Advisory Committee meeting.
[112] See NPDES Phase II Small MS4 General Permit Annual Report, May 2004, for the City of Newton, MA, BMPs 4.1, 5.1, and 6.2.
[113] 40 C.F.R. §122.34(d)(1). Phase II requires operators to identify BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action." *See also* "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000) ("Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness.")

Additional examples of problems with Newton's small MS4 program, as evidenced by the Annual Report, include the following:

- Newton has not made progress on its employee training program, established measurable goals for its employee training program, and has not established measurable goals for extending the training program to businesses and the general public. Newton "must inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper waste disposal."[114]

- Newton has not made progress on its detection and elimination procedures (BMP #3.9) for illicit discharges, and has not established measurable goals for implementing an effective program.

- It is unclear from the Annual Report whether Newton is in compliance with General Permit, Part II(B)(4)(d), which requires the City to establish "procedures for site plan review *including procedures which incorporate consideration of potential water quality impacts* . . . includ[ing] procedures for preconstruction review."

- BMPs #4.3, #5.2 and #5.4 claim that City engineering departments require the use of stormwater BMPs for all construction > 1 acre as part of the construction and post-construction minimum control measures. However, it is unclear which BMPs are required. Further, it is unclear whether BMP #5.4 (Controls to Minimize Impacts to Water Quality) satisfies the requirements of the General Permit to establish procedures "to ensure that any controls that are put in place will prevent or minimize impacts to water quality."[115]

- With some exceptions, most of Newton's measurable goals (including information provided in the Annual Report under "Planned Activities PY2") are not specific enough, and fail to provide the information necessary to gauge permit compliance and program effectiveness. As discussed above, Phase II requires operators to identify BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action."[116]

Newton's failure to implement an enforceable regulation for minimum control measures three, four, five and six constitutes a substantial deviation from the requirements of the General Permit and the Regulation. While many of the "additional examples" of problems with Newton's SWMP are correctable, the City of Newton's failure to begin the process of developing an enforceable regulation for implementation of the program is a major shortfall of its SWMP. The City must take immediate action (including the immediate identification of measurable goals and interim milestones) to ensure compliance with WQS by 2008**.**

[114] General Permit, Part II(B)(3)(d).
[115] General Permit, Part II(B)(5)(c) [emphasis added].
[116] 40 C.F.R. §122.34(d)(1).

CITY OF WALTHAM

Waltham discharges into four impaired waterbodies (Beaver Brook, Charles River, Hardy Pond and Hobbs Brook Reservoir) of which two are clearly impaired by stormwater (Beaver Brook and the Charles River, Segments MA72-28 and MA72-29. Both segments are impaired by siltation, taste, odor, color, turbidity, nutrients, organic enrichment/low DO, and pathogens. MA72-29 is also impaired by noxious aquatic plants and oil and grease. Fecal coliform bacteria levels were high for both segments (480-4,400cfu/100mL in MA72-28 and between 340 and 4,000 cfu/100 mL in MA72-29). Nutrient levels were also elevated in both segments, with ammonia-nitrogen levels as high as .68mg/L and phosphorus levels as high as .16 in MA72-28. Further, dissolved oxygen levels were as low as 2.0mg/L at 22% saturation in MA72-28. Additionally, in MA72-29 high chlorides and conductivity measurements, massive amounts of sedimentation, and complete channelization, reduction/elimination of the riparian zone were found.

As discussed above, Section IX of the General Permit requires that the permittee identify discharges to impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. Waltham does not do so. Further, Waltham does not identify how it will specifically control "pollutants of concern" into water bodies impaired by those pollutants as required by Part I.C.2 of the General Permit. As explained above, Waltham has an affirmative duty to show that its program will ensure compliance with WQS. Furthermore, the NOI itself is neither specific enough to provide measurable goals nor aggressive enough to ensure compliance with water quality standards by the spring of 2008.[117] See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

Assessment of Waltham NOI

Public Education (Minimum Control Measure #1)

While Waltham's existing and proposed BMPs for Control Measure #1 ("Public Education") are acceptable, its "measurable goals" are too general to enable EPA and/or DEP to gauge the effectiveness of program implementation.[118] Title 40 C.F.R. §122.34(d)(1) requires that all NOIs include measurable goals, including, where appropriate, specified target months and years for implementation, interim milestones,

[117] For example, Newton often utilizes the "Specify Measurable Goal" field in the NOI to provide a general description of the respective BMP. See 40 C.F.R. §122.34(d)(1) ("In your permit application (either a notice of intent for coverage under a general permit or an individual permit application), you must identify and submit to your NPDES permitting authority the following information . . . (i) The best management practices (BMPs) that you or another entity will implement for each of the storm water minimum control measures at paragraphs (b)(1) through (b)(6) of this section; [and], (ii) The measurable goals for each of the BMPs including, as appropriate, the months and years in which you will undertake required actions, including interim milestones and the frequency of the action.")

[118] See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000) ("[m]easurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness.").

and frequency of action.[119] As such, EPA provides four "Appropriate Measurable Goals" for compliance with the requirements of Minimum Control Measure #1, two of which identify specific percentages of the public reached, specific percentages of receivership in compliance with the recommendations of the public education program.[120] BMPs # 1-5 identify only the intended recipients of public education efforts, and do not include interim milestones or frequency of action. In order to meet the requirements of Phase II, as established by 40 C.F.R. §122.34, the City of Waltham must immediately identify measurable goals for each of its BMPs for Minimum Control Measure #1.

Public Participation (Minimum Control Measure #2)

The City of Waltham must ensure that all public involvement activities (re: Minimum Control Measure #2) comply with state public notice requirements at MGL Chapter 39 Section 23B and local public notice requirements.[121] This requirement includes the condition that "the permittee . . . provide opportunity for the public to participate in the implementation and review of the storm water management program."[122] Waltham fails to provide the opportunity for the public to participate in the implementation and review of the SWMP, and its NOI fails to identify a BMP for this requirement or a measurable goal for its implementation.[123] Although Waltham has until 2008 to implement all required elements of its SWMP, failure to provide an opportunity for public participation is a violation of 40 C.F.R. §122.34(d)(1), which requires BMPs and measurable goals for all Minimum Control Measures as a condition of being allowed to discharge prior to 2008.[124] In addition, for some of its BMPs Waltham fails to establish measurable goals to enable EPA and/or DEP to gauge program effectiveness and ensure compliance with the Clean Water Act.[125] For example, for its stream clean up program Waltham submits (as its measurable goal): "support existing program and identify new sites."[126] However, the City fails to identify how many streams it intends to clean up in upcoming years, or any other interim milestone that would allow EPA and/or DEP to gauge program effectiveness. Waltham must immediately improve its public involvement activities, particularly in regard to the establishment of measurable goals, to ensure compliance with the General Permit, WQS and the Clean Water Act.[127]

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[119] See 40 C.F.R. §122.34(d)(1) ("In your permit application (either a notice of intent for coverage under a general permit or an individual permit application), you must identify and submit to your NPDES permitting authority the following information . . . (i) The best management practices (BMPs) that you or another entity will implement for each of the storm water minimum control measures at paragraphs (b)(1) through (b)(6) of this section; [and], (ii) The measurable goals for each of the BMPs including, as appropriate, the months and years in which you will undertake required actions, including interim milestones and the frequency of the action.").

[120] U.S. EPA "Stormwater Phase II Compliance Assistance Guide," (March 2000), p. 4-22 (e.g. "[a] certain percentage of restaurants no longer dumping grease and other pollutants down storm sewer drains" or "[a] certain percentage reduction in litter or animal waste detected in discharges.").

[121] See also General Permit, Part II(B)(2).

[122] General Permit, Part II(B)(2)(a).

[123] See NPDES Stormwater General Permit Notice of Intent, BRP WM 08A, Section D, BMP 11, p. 3.

[124] See Note 41.

[125] We recognize that greater detail is provided by the third party analysis of Waltham's SWMP conducted by Rizzo Associates; however, measurable goals are a required element of a valid NOI. 40 C.F.R. §122.34.

[126] City of Waltham NPDES Stormwater General Permit Notice of Intent, BRP WM 08A, Section D, p. 3.

[127] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-23 ("The public participation process should make every effort to reach out and engage all economic and ethnic groups. EPA recognizes that there are challenges associated with public involvement.

Illicit Discharge Detection and Elimination (Minimum Control Measure #3)
The City of Waltham must develop, implement and enforce a program to both detect and eliminate illicit discharges into the storm water system by 2008.[128] Waltham plans to complete drainage mapping, develop a discharge ordinance and implement a discharge detection program. The Center for Watershed Protection recommended several elements in 1999 that should be incorporated into the city's GIS system, including location of structural controls owned and operated by the municipality, location of landfills and treatment storage disposal facilities, hazmat corridors and facilities, facilities with spill response/containment plans, CERCLA facilities, RCRA regulated facilities, sites with NPDES permits for the discharge of stormwater or process water, MWRA TRAC facilities, gas stations and other "hot spots." It is unclear from the NOI whether the planned mapping will include details of potential pollutant sources. However, it is unclear based on the information contained in the NOI whether the IDDE program (1) includes the education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste;[129] and, (2) includes procedures for the elimination of illicit discharges (as opposed to just detection).[130] In addition, and as discussed above, Waltham must establish measurable goals for each of the BMPs including, as appropriate, the months and years in which it will undertake required actions, including interim milestones and the frequency of the action.[131] EPA recommends that permittees identify specific implementation and compliance goals by which to measure program effectiveness.[132] While the City is making a good faith effort to complete drainage mapping, and has targeted for implementation the key elements of Minimum Control Measure #3, measurable goals and interim milestones must be established to meet the requirements of Phase II and ensure the ultimate success of Waltham's SWMP. Measurable goals will also help Waltham gauge its own progress and implement any necessary program improvements.

Construction Site Runoff Control (Minimum Control Measure #4)
According to its NOI, Waltham plans to develop and implement a "construction site stormwater runoff control" program, as required by Minimum Control Measure #4, by reviewing and improving its existing ordinances and requirements. In 1999, the Center for Watershed Protection recommended that Waltham establish clear guidelines for when erosion and sediment control is required on a development or redevelopment site. CWP suggested that these guidelines should be set for all projects, rather than on a site-by-site basis, through an erosion and sediment control ordinance. It is not clear from the NOI

Nevertheless, EPA strongly believes that these challenges can be addressed through an aggressive and inclusive program.").
[128] General Permit, Part II(B)(3).
[129] As required by General Permit, Part II(B)(3)(d).
[130] As required by General Permit, Part II(B)(3)(c)(iii).
[131] See 40 C.F.R. §122.34(d)(1).
[132] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-29 ("[Year 3:] A certain percentage of: illicit discharges detected; illicit discharges eliminated; and households participating in quarterly household hazardous waste special collection days.").

whether this will be included in the revision and enforcement of the existing runoff control ordinance (BMPs #17 and 19). Aside from enforcing these existing programs, the City does not indicate when the process of deriving a comprehensive program that meets the Phase II requirements will be completed, or provide interim milestones to gauge program development and effectiveness. For example, BMPs #19 and #20 indicate that Waltham plans to review the existing ordinance and implement any necessary changes, but does not provide any measurable goals for this process.[133] Section F of the NOI does not provide a time frame for completion or implementation. EPA recommends that permittees set percentage-goals for program compliance, including confirmation of improved water quality.[134] Yet Waltham has not established sufficient information to gauge compliance. Although Waltham has until 2008 to implement all required elements of its SWMP, failure to provide measurable goals for each BMP is a violation of 40 C.F.R. §122.34(d)(1), which requires measurable goals (and, where appropriate, interim milestones) as a condition of being allowed to discharge prior to 2008.[135]

Post Construction Runoff Control (Minimum Control Measure #5)

The cornerstones of Minimum Control Measure #5 are: (1) a post-construction runoff ordinance; (2) procedures to ensure adequate long-term operation of BMPs; and (3) procedures to ensure controls prevent or minimize impacts to water quality.[136] EPA has determined that the "appropriate" measurable goals for implementing this control measure would include interim milestones such as "reduced percent of new impervious surfaces associated with new development projects," and "improved clarity and reduced sedimentation of local waterbodies."[137] Additionally, CWP recommended in 1999 that the City consider creating design requirements that will reduce impervious cover in new development and redevelopment. It does not appear that this recommendation was addressed in Waltham's NOI. While Waltham has identified the key areas of its post-construction runoff program (see BMPs #23-24), and already has some regulations in place to control post-construction runoff, the City has not provided sufficient measurable goals to enable EPA and/or DEP to gauge the development, implementation and enforcement of a comprehensive post-construction program.[138] In addition, it is unclear from the NOI whether Waltham's monitoring program would include water quality monitoring, as required by Part II(B)(5)(c) of the General Permit. Given that Part II(B)(5) of the General Permit requires the development, implementation and enforcement of a comprehensive stormwater program for new development and

[133] As discussed above, 40 C.F.R. §122.34(d)(1) requires Waltham to establish measurable goals for each of the BMPs including, as appropriate, the months and years in which you will undertake required actions, including interim milestones and the frequency of the action.
[134] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32.
[135] See Note 41.
[136] General Permit, Part II(B)(5)(a)-(c).
[137] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-35.
[138] We recognize that greater detail is provided by the third party analysis of Waltham's SWMP conducted by Rizzo Associates; however, measurable goals are a required element of a valid NOI. 40 C.F.R. §122.34(d)(1). And the Rizzo report only identifies the target dates as set forth in Section F of the Waltham NOI.

redevelopment projects, it is important that Waltham provide measurable goals to enable EPA and/or DEP to ensure such actions are taken.

Pollution Prevention/Good Housekeeping (Minimum Control Measure #6)
Control measure #6 requires *both* MS4 maintenance (including inspection) and pollution prevention (e.g. programs to promote litter reduction, proper animal waste disposal, reductions in pesticide use, reductions in salt runoff from salt storage sites, etc. are EPA-recommended BMPs). As discussed above, the NOI must contain BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action." Waltham's NOI identifies the key BMPs for implementing this control measure, including the development and adoption of "Source Control, Operations and Maintenance Plan" to improve the effectiveness and coordination between existing programs. However, the NOI fails to establish sufficient measurable goals for each BMP.[139] EPA has determined that appropriate measurable goals for Minimum Control Measure #6 would include compliance goals in years three (3) and four (4), such as "a certain percentage reduction in pesticide and sand/salt use," or "a certain percentage reduction in floatables discharged; a certain compliance rate with maintenance schedules for BMPs, controls in place for all areas of concern." However, Waltham's NOI (including Section F) does not identify measurable implementation or compliance goals for BMPs #26-29. While Waltham may ultimately develop a compliant pollution prevention and good housekeeping program, it must immediately identify measurable goals to comply with the requirements of 40 C.F.R. 122.34(d)(1) and enable EPA and DEP to enforce Phase II of the NPDES permitting program.

Waltham's failure to establish measurable goals for each minimum control measure violates Part II(A)(5) of the General Permit, which requires permittees to identify measurable goals for each BMP, including timelines and milestones for implementation. While Section F of the NOI provides some information about time frames for program implementation, many of the indicators extend for the duration of the 5-year permit period.

Assessment of Waltham Annual Report

Waltham's Annual Report evidences a good-faith effort to implement the requirements of Phase II. The City reports progress in most program areas, and has achieved many of the general goals established in its NOI. An ongoing weakness of the Waltham's SWMP is the lack of effective measurable goals that would enable EPA and/or DEP to gauge program effectiveness and permit compliance.[140] Thus, while Waltham's Annual Report evidences progress toward the development and implementation of an effective SWMP, in many cases the City has identified only general goals that are impossible or difficult to enforce. Measurable goals are a critical and required element of any Phase II SWMP implementation plan, and are necessary to allow EPA and/or DEP to gauge permit compliance and program effectiveness, and ensure compliance with

[139] We recognize that Waltham has existing maintenance and housekeeping procedures in place. However, the City must nonetheless establish measurable goals as a required element of a valid NOI. 40 C.F.R. §122.34(d)(1).
[140] As discussed, the establishment of measurable goals for each BMP is a requirement of Phase II; see 40 C.F.R. §122.34(d)(1).

the Clean Water Act.[141] As such, Waltham must begin identifying measurable goals in its Annual Reports and/or its NOI to maintain compliance with the conditions of the General Permit, state regulations and the CWA.

Additional comments regarding Waltham's SWMP, as evidenced by its Annual Report, include:

- Waltham's Annual Report in regard to Control Measure #1 is incomplete. The City's NOI identifies five BMPs for this control measure, yet the Annual Report provides progress reports for only four of them. In addition, the independent report reviewing Waltham's SWMP ("Rizzo Report") submitted as part of its Phase II compliance documentation identifies five additional proposed BMPs not included in Waltham's NOI or the Annual Report. The Annual Report must contain a discussion of selected BMPs,[142] as well as a discussion of "any changes in identified BMPs or measurable goals."[143] While we commend the City of Waltham for expanding their program goals, the City must provide such information in its Annual Report, and establish measurable goals for each new BMP.

- Waltham's Annual Report in regard to Control Measure #2 is incomplete. The Annual Report provides progress analysis for three BMPs, yet the Rizzo Report identifies an additional BMP for this control measure (Adopt-A-Stream program) undisclosed in the Annual Report. In addition, while the Annual Report provides little detail about PY1 progress and planned activities for PY2, the Rizzo Report provides more detailed information. Given that the Rizzo Report was completed one year prior to the submission of the Annual Report, this information should have been included in the Annual Report. As discussed, the Annual Report must contain a discussion of selected BMPs,[144] as well as a discussion of "any changes in identified BMPs or measurable goals."[145] While we commend the City of Waltham for expanding their Public Participation program goals, the City must provide such information in its Annual Report, and establish measurable goals for each new BMP. If this information is included in the Annual Report, the City will likely be in compliance with the conditions of the General Permit related to the initial development and implementation of this control measure. However, as currently drafted, the Annual Report fails to meet the conditions of the General Permit.

- Waltham's Annual Report in regard to Control Measure #3 is incomplete. The Report does not identify or discuss the City's Illicit Discharge Detection Program, identified as a "new BMP" by the Rizzo Report. As discussed, the Annual Report must contain a

[141] 40 C.F.R. §122.34(d)(1). Phase II requires operators to identify BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action." *See also* "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000) ("Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness.")
[142] General Permit, Part II.F.2.a.
[143] General Permit, Part II.F.2.f.
[144] General Permit, Part II.F.2.a.
[145] General Permit, Part II.F.2.f.

discussion of selected BMPs,[146] as well as a discussion of "any changes in identified BMPs or measurable goals."[147] In addition, the Annual Report makes no mention of a program to educate public employees about the hazards associated with illicit discharges and improper disposal of waste. To establish compliance with the General Permit, the City must: (1) add the information contained in the Rizzo Report to the Annual Report; (2) establish a BMP and measurable goals for a public employee education program; and, (3) ensure that each of its BMPs have measurable goals and, where appropriate, interim milestones as required by 40 CFR 122.34(d)(1). In regard to the development of an IDDE ordinance, EPA recommends that the ordinance or regulation be developed in PY1, and be in place in PY2.[148] Waltham reports significant progress toward the achievement of this goal.

- Waltham's Annual Report in regard to Control Measure #4 is complete. Since Waltham already has several mechanisms in place to control construction site runoff, the City has properly focused on strengthening its existing rules and regulations. The review process appears to be on schedule. To ensure compliance with the conditions of the General Permit, Waltham's overall construction site runoff program should include the identification of more effective and specific measurable goals, including percentage-based compliance targets, as recommended by EPA. In addition, the construction site runoff program should include a water quality testing component, and a procedure for receipt and consideration of information received from the public.

- Waltham's Annual Report in regard to Control Measure #5 is incomplete. The Report does not identify or discuss two BMPs (Runoff Control Ordinance and Inspector Training Program) identified by the Rizzo Report. As discussed, the Annual Report must contain a discussion of selected BMPs,[149] as well as a discussion of "any changes in identified BMPs or measurable goals."[150] We commend the City for considering these BMPs; however, in order to comply with the conditions of the General Permit they must be identified and discussed in the Annual Report. Further, the City should include the information contained in the Rizzo Report in the Annual Report, especially information about annual progress toward implementation of the program elements and planned activities in future permit years. The General Permit requires Waltham to include in the Annual Report "[a] summary of results of *any information* that has been collected and analyzed."[151] We also commend the City's utilization of both the Conservation Commission and the Engineering Department to develop, implement and enforce the post construction runoff controls. Once this information is included in the Annual Report, all the elements exist for the operation of an effective post construction runoff program.

[146] General Permit, Part II.F.2.a.
[147] General Permit, Part II.F.2.f.
[148] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-29.
[149] General Permit, Part II.F.2.a.
[150] General Permit, Part II.F.2.f.
[151] General Permit, Part II.F.2.d.

- Waltham's Annual Report in regard to Control Measure #6 is incomplete. The Report does not identify or discuss two BMPs (Source Control, Operations and Maintenance Plan and Staff Training) identified by the Rizzo Report. As discussed, the Annual Report must contain a discussion of selected BMPs,[152] as well as a discussion of "any changes in identified BMPs or measurable goals."[153] We commend the City for considering these BMPs; however, in order to comply with the conditions of the General Permit they must be identified and discussed in the Annual Report. The Annual Report also evidences the lack of measurable goals established for this control measure in the NOI. As discussed above, EPA recommends that municipalities identify percentage-based compliance goals for its pollution prevention/good housekeeping programs, such as targeted reductions in pesticide use and/or road salt use. Waltham has not identified measurable goals for many of the BMPs for this control measure. For example, while Waltham established and met the measurable goals identified for its Watershed Maintenance Program (BMP#6.5), the City failed to establish measurable goals for its Catch Basin Cleaning, Drain Cleaning, Street Sweeping and Recycling programs. As a result, the Planned Activities for upcoming permit years are overly general (e.g. "continue implementation"). The General Permit makes clear that the BMPs and measurable goals are the backbone of program development and implementation by the permittee, as well as EPA/DEP enforcement of the permit conditions.[154] In order to ensure compliance with the conditions of the General Permit, state regulations and the CWA, Waltham should identify measurable goals for each of its BMPs.

While municipalities have until the expiration of the first permit term (2008) to implement all elements of its Phase II SWMP, permittees must comply with the interim requirements of Phase II. These requirements include the establishment of effective BMPs and measurable goals (including, where appropriate, interim milestones) for each BMP,[155] and the submission of Annual Reports detailing ongoing implementation of its BMPs and compliance with its measurable goals.[156] Based on the information provided in its Annual Report, Waltham must update its Annual Report to include progress analysis, detailed program goals for upcoming permit years, and measurable goals for each BMP.

[152] General Permit, Part II.F.2.a.
[153] General Permit, Part II.F.2.f.
[154] See General Permit, Part II.D-F. For example, Part II.D states that permittees must provide written notice to the EPA to replace a BMP, detailing why the former BMP was ineffective, expectations of the effectiveness of the new BMP, and an analysis of why the replacement BMP will achieve the goals of the BMP being replaced.
[155] 40 CFR 122.34(d)(1).
[156] General Permit, Part II.F

TOWN OF WATERTOWN

Watertown discharges into two impaired segments of the Charles River (MA72-07 and MA72-08), one impaired tributary to the Charles River (Laundry Brook, MA72-30). All three are highly impaired by turbidity, priority organics, nutrients, organic enrichment/low DO, pathogens, and noxious aquatic plants. Segment MA72-08 of the Charles River is impaired by metals, oil and grease. Fecal coliform levels were high for all segments, particularly in MA72-07 where levels ranged from 20cfu/100mL to 78,000 cfu/100mL during wet weather conditions. Elevated nutrients and high chlorophyll concentrations (as high as 48µg/L in MA72-30) were also common in all three segments. Elevated levels of PCB were found in carp and elevated concentrations of pesticides, heavy metals, and/or PCM measurements were found in sediment sampling in MA72-07 and MA72-08. Further, all of the 19 discharges into the Basin are untreated with the exception of the discharges from the Cottage Farm CSO Treatment Facility in the MA72-08 segment. Watertown also discharges into Sawins Brook (MA72-32), which is impaired for pathogens.

As discussed above, Section IX of the General Permit requires that the permittee identify discharges to impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. Watertown does not do so. Further, Watertown does not identify how it will specifically control "pollutants of concern" into water bodies impaired by those pollutants as required by Part I.C.2 of the General Permit. As explained above, Watertown has an affirmative duty to show that its program will ensure compliance with WQS. Furthermore, the NOI itself is neither specific enough to provide measurable goals nor aggressive enough to ensure compliance with water quality standards by the spring of 2008.[157] See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

Assessment of Watertown NOI

Public Education (Minimum Control Measure #1)

The Town of Watertown identifies several general goals for implementing the public education element of its stormwater management program. However, the Town does not identify sufficient measurable goals or interim milestones to enable EPA and/or DEP to gauge the effectiveness of program implementation.[158] EPA provides four (4) "Appropriate Measurable Goals" for complying with the requirements of minimum control measure #1, two of which identify specific percentages of the public reached and in compliance with the recommendations of the public education program.[159] Watertown

[157] See 40 C.F.R. §122.34(d)(1) ("In your permit application (either a notice of intent for coverage under a general permit or an individual permit application), you must identify and submit to your NPDES permitting authority the following information . . . (i) The best management practices (BMPs) that you or another entity will implement for each of the storm water minimum control measures at paragraphs (b)(1) through (b)(6) of this section; [and], (ii) The measurable goals for each of the BMPs including, as appropriate, the months and years in which you will undertake required actions, including interim milestones and the frequency of the action.")

[158] The EPA states that "[m]easurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness." See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000).

[159] See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000), p. 4-22.

does not identify compliance or distribution goals for any of its outreach BMPs. For its education of public schools, Watertown provides a measurable goal of "On-going."[160] Conversely, Watertown does establish an effective measurable goal for BMP 1D, indicating that it will complete the labeling of all outfalls by the end of PY2. However, for BMP 1E (Pet Waste Management), it is unclear how the "enforcement of pet waste rules" could be measured by EPA and/or DEP.[161] The Town of Watertown must amend its NOI to include measurable goals for its public education program to comply with 40 C.F.R. 122.34. Such measurable goals should include interim milestones for program implementation and distribution and public compliance goals for its outreach programs.

Public Participation (Minimum Control Measure #2)

Watertown's NOI properly recognizes that the City must comply with state public notice requirements at MGL Chapter 39 Section 23B and local public notice requirements,[162] and commits to annual meetings to discuss stormwater issues. Watertown must also determine the appropriate BMPs and measurable goals to inform and utilize the public to develop and implement its SWMP. While establishing an event and/or meeting schedule for various cleanup and watch efforts is a good first step, EPA recommends that Towns and Cities establish measurable goals for program participation and public involvement.[163] For example, BMP 2D ("Citizen Watch Group") establishes "2 meetings per year" as its measurable goal. However, it is unclear what measurable goals will be identified and/or achieved by those citizen watch groups, or even what groups will be targeted. Watertown should improve its public participation programs to include the establishment of a volunteer water quality monitoring program, a more specific citizen watch group program with measurable goals and an "Adopt A Storm Drain" program.[164] Cambridge must identify measurable goals and (where appropriate) interim milestones for each of these BMPs, including community participation goals.[165] Effective BMPs are designed to reduce the discharge of pollutants from small MS4s to the "maximum extent practicable."[166] Without a more substantial commitment toward public participation in the development and implementation in its NOI, Watertown has not met the requirements of Phase II for this control measure.[167]

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[160] See Watertown BMP 1C. In Section F of the NOI, which specific time frames for completion of the BMPs, Watertown submits that BMP 1 C will be conducted in regular intervals, but offers no completion, distribution or community compliance goals.

[161] In addition, it is unclear whether Watertown has established pet waste rules, as pet waste does not appear to be part of the Town's "Sanitary Sewer and Storm Drains Regulations" adopted in 1990.

[162] General Permit, Part II(B)(2).

[163] See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000), p. 4-24.

[164] EPA recommends separate BMPs for each of these programs. See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000), p. 4-24.

[165] EPA recommends the identification of specific percentages for community participation in monitoring and cleanups, and percentages of neighborhoods with citizen watch groups. See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000), p. 4-24.

[166] See 314 C.M.R. 3.06(11)(b)(4).

[167] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-23 ("The public participation process should make every effort to reach out and engage all economic and ethnic groups. EPA recognizes that there are challenges associated with public involvement. Nevertheless, EPA strongly believes that these challenges can be addressed through an aggressive and inclusive program.").

Illicit Discharge Detection and Elimination (Minimum Control Measure #3)
Watertown's NOI does not contain sufficient information to comply with the Phase II requirements for this control measure. First, Watertown's existing "Sanitary Sewer and Storm Drains Regulations" do not appear to prohibit all non stormwater discharges into the wastewater system (i.e. all illicit discharges).[168] Second, Watertown has not provided in its NOI a BMP for the education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste.[169] Third, Watertown does not provide sufficient measurable goals or interim milestones to enable EPA and/or DEP to gauge the effectiveness of program implementation.[170] For example, four of the five BMPs submitted for this control measure #3 offer either "remove illicit connections" or "On-going" as their only measurable goals or milestones. EPA recommends that the NOIs contain the following measurable goals for compliance with control measure #3: "Ordinance in place; training for public employees completed; a certain percentage of sources for illicit discharges determined [PY2]. . . . A certain percentage of: illicit discharges detected, illicit discharges eliminated; and households participating in quarterly household hazardous waste special collection days [PY3]. . . . Most illicit discharge sources detected and eliminated [PY4]."[171] Although the Town indicates that it will update its stormwater map (BMP #3C), it does not indicate whether it will incorporate the recommendation made in 1999 by the Center for Watershed Protection several other features should be incorporated into the town's GIS system, including location of structural controls owned and operated by the municipality, location of landfills and treatment storage disposal facilities, hazmat corridors and facilities, facilities with spill response/containment plans, CERCLA facilities, RCRA regulated facilities, sites with NPDES permits for the discharge of stormwater or process water, MWRA TRAC facilities, gas stations and other "hot spots."
The Town of Watertown must amend its NOI to include measurable goals for its IDDE program to comply with 40 C.F.R. 122.34. Such measurable goals should include interim milestones for program implementation and discharge elimination.

Construction Site Runoff Control (Minimum Control Measure #4)
The Town of Watertown fails to establish effective measurable goals and interim milestones for the development, implementation and enforcement of its Construction Site

[168] The Watertown rules prohibit discharges that are "likely" to "harm" the wastewater system. However, federal regulations define an illicit discharge as "… any discharge to an MS4 that is not composed entirely of storm water." See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-25 (see also "[i]t is important to note that 'illicit' does not mean 'illegal. Not every illicit discharge is necessarily a prohibited illegal discharge.").
[169] As required by General Permit Part II.B.3.d.
[170] The EPA states that "[m]easurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness." See U.S. EPA's "Stormwater Phase II Compliance Assistance Guide," (March 2000).
[171] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-29.

Runoff Control Program. Presumably, BMPs 4A-4D will include each required element of the program; however, there are no measurable goals or interim milestones provided. EPA recommends that permittees set percentage-goals for program compliance, including confirmation of improved water quality.[172] Other municipalities have established BMPs and measurable goals for each element of program development (e.g. development of ordinance, on-site erosion and sedimentation control plans, inspections and enforcement).[173] Thus, Watertown must identify more specific measurable goals to enable regulators to ensure compliance with the General Permit and to ensure that its BMPs reduce the discharge of pollutants from small MS4s to the "maximum extent practicable."[174] Further, Watertown does not include a BMP to establish procedures for the receipt and consideration of information submitted by the public, as required by Part II.B.4.f of the General Permit. While Watertown has until the end of the first permit terms to develop, implement and enforce this program, the NOI must nonetheless contain the BMPs that Watertown will implement for each minimum control measure, and the measurable goals for each of the BMPs "including, as appropriate, the months and years in which [Watertown] will undertake required actions, including interim milestones and the frequency of the action."[175] The only detailed BMP submitted by Watertown for this control measure (BMP 4E: Oil/gas separators (for areas greater than 4 parking spaces)) does not include an effective measurable goal.[176] The Town of Watertown must amend its NOI to include measurable goals for its Construction Runoff Control program to comply with 40 C.F.R. 122.34. Such measurable goals should include interim milestones for program implementation and compliance goals for program enforcement.

Post Construction Runoff Control (Minimum Control Measure #5)

Watertown has not provided sufficient information to comply with Phase II requirements for this control measure. First, the Town does not provide measurable goals or interim milestones for BMP 5A ("Update Town Ordinances"). CWP recommended that Watertown consider creating design requirements that will reduce impervious cover in new development and redevelopment. This recommendation was not addressed in the NOI. Second, the two remaining BMPs submitted for this control measure ("Update BMPs and details" and "Adopt non-structural BMPs") are not best management practices. 314 CMR 3.02 defines BMPs as "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the Commonwealth. BMPs include treatment requirements, operating procedures, structures, devices, and/or practices to control plant site runoff, spillage, or leaks, sludge or waste disposal, or drainage from raw material storage." Title 40 C.F.R. 122.34(d)(1) clearly requires Watertown to submit BMPs for each control measure. Further, Watertown must also provide measurable goals for each BMP to enable EPA and/or DEP to ensure that a post construction runoff program is developed, implemented and enforced. The EPA has determined that "appropriate" measurable

[172] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32.
[173] See, e.g., Town of Wellesley NOI.
[174] See 314 C.M.R. 3.06(11)(b)(4).
[175] See 40 C.F.R. §122.34(d)(1).
[176] Watertown BMP 4E submits for its measurable goal: "On-going," for which no timetable is provided for its development, implementation or enforcement in Section F.

goals for this control measure include the identification of specific program goals, such as "reduced percent of new impervious surfaces associated with new development projects," and "improved clarity and reduced sedimentation of local waterbodies."[177] Watertown must identify similar measurable goals to comply with Part II.A.5 of the General Permit and 40 C.F.R. §122.34(d)(1). We strongly recommend that Watertown immediately amend its NOI to include BMPs and measurable goals, as required by the General Permit and state regulations.

Pollution Prevention/Good Housekeeping (Minimum Control Measure #6)

The "pollution prevention and good housekeeping" minimum control measure requires *both* MS4 maintenance (including inspection) and pollution prevention. The NOI must contain appropriate BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action."[178] EPA has determined that "appropriate" measurable goals for this minimum control measure include percentage-based compliance goals, such as "a certain percentage reduction in floatables discharged."[179] Programs to promote litter reduction, proper animal waste disposal, reductions in pesticide use, reductions in road salt use and reductions in salt runoff from salt storage sites are additional examples of EPA-recommended BMPs.[180] Although Watertown has several pollution prevention and good housekeeping procedures in place, including catch basin cleaning, street sweeping, and plans to review the Emergency Management Plan, its program should be more robust to ensure that the Town reduces pollution to the "maximum extent practicable." For example, BMPs for this control measure in other municipalities include goals to reduce pesticide use and salt/sand use on roadways, and to improve participation in waste recycling programs. Watertown must also provide measurable goals for *existing and future* program activity to comply with the Phase II NOI requirements, to enable EPA and/or DEP to enforce the Phase II SWMP requirements, and to ensure compliance with 40 C.F.R. §122.34(d)(1). For example, Watertown submits "Inspect problematic system locations regularly" for its measurable goal for BMP 6D, which does not provide sufficient information for EPA and/or DEP to ensure program effectiveness. The Town should provide percentage goals for reductions in floatables discharged, reductions in sand/salt use, and improved catch basin cleaning. In addition, Watertown does not identify a BMP for developing and implementing a public employee training program, as required by Part II.B.6.a of the General Permit.[181] Watertown should amend its NOI to include more robust pollution prevention programs and effective measurable goals. Such improvements are critical to

[177] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-35.
[178] See 40 C.F.R. §122.34(d)(1).
[179] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-37.
[180] *Id*.
[181] EPA recommends that the employee training program should detail how to incorporate pollution prevention/good housekeeping techniques into activities not directly related to stormwater management, such as park and open space maintenance, fleet and building maintenance, and new construction and land disturbances. See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-36.

ensure that the City reduces pollution to the "maximum extent practicable" and to enable EPA and/DEP to enforce Phase II of the NPDES program.

Assessment of Watertown Annual Report

Watertown's Annual Report is complete is some areas and incomplete in others. The Town is making significant progress toward the implementation of effective and fully compliant public education and public participation programs. However, potential problems with the Town's NOI resurface in its Annual Report. It remains unclear whether Watertown's existing stormwater ordinance meets the requirements of the General Permit. The Town has not made significant progress toward the implementation of construction and post construction runoff control ordinances and enforcement programs. An ongoing weakness of the Watertown's overall SWMP is the lack of effective measurable goals that would enable EPA and/or DEP to gauge program effectiveness and permit compliance.[182] Thus, while the Annual Report evidences progress toward the development and implementation of an effective SWMP in some areas, in many cases the Town has identified only general goals that are impossible or difficult to enforce. Measurable goals are a critical and required element of any Phase II SWMP implementation plan, and are necessary to allow EPA and/or DEP to gauge permit compliance and program effectiveness, and ensure compliance with the Clean Water Act.[183] As such, Watertown must begin identifying measurable goals in its Annual Reports and/or its NOI to maintain compliance with the conditions of the General Permit, state regulations and the CWA.

Additional comments regarding Watertown's SWMP, as evidenced by its Annual Report, include:

- Watertown's Annual Report in regard to Control Measure #1 is incomplete, although it is evident that in many areas the Town is making a good faith effort to implement this control measure. The Report evidences significant progress toward the implementation of BMPs 1A, 1D and 1E. However, the Town did not meet its measurable goal for BMP 1B (Municipal Services at Local Mall), and does not provide a progress analysis or summary of planned activities for BMP 1C. The Annual Report must contain a discussion of selected BMPs,[184] as well as a discussion of "any changes in identified BMPs or measurable goals."[185] Part II.D.2 of the General Permit requires that any changes to BMPs must be requested in writing to the EPA and MA DEP, and include a description of why the change was necessary. Thus, the Town has violated the terms of the General Permit by failing to disclose this information. The City must provide such information, and establish measurable goals for each BMP, to establish compliance with the General Permit and state stormwater regulations.

[182] As discussed, the establishment of measurable goals for each BMP is a requirement of Phase II; see 40 C.F.R. §122.34(d)(1).
[183] 40 C.F.R. §122.34(d)(1). Phase II requires operators to identify BMPs, measurable goals for each BMP, and a schedule for expected implementation, including the months and years in which operators will undertake required actions, and "interim milestones and the frequency of the action." *See also* "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000) ("Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness.")
[184] General Permit, Part II.F.2.a.
[185] General Permit, Part II.F.2.f.

- Watertown's Annual Report in regard to Control Measure #2 evidences significant progress toward the effective implementation of this control measure. For example, the Report evidences active programs in several recommended and required areas, including the holding of public meetings, community cleanups and citizen watch group events. The one area where the Town has failed to meet the requirements of the General Permit is in regard to BMP 2E (Riverwatch Program), for which Watertown did not meet the established measurable goal, has not provided an assessment of progress toward achieving that goal, and has not provided an "discussion of activities" for the next reporting cycle.[186] Watertown must provide this information to establish compliance with the General Permit for this control measure. If this information is disclosed, it is likely that Watertown will be in compliance with the conditions of the General Permit for this control measure.

- Watertown's Annual Report in regard to Control Measure #3 evidences several outstanding issues in regard to its NOI. First, it remains unclear whether the Town's existing stormwater ordinance meets the requirements of the General Permit.[187] The Annual Report indicates that the Town is working with private consultants and various Town agencies to identify and eliminate illicit discharges, however it is unclear whether they have the authority to prohibit and sanction all illicit discharges, including but not limited to illegal discharges. Second, the Town has not established a BMP for the education of public employees, businesses and the general public about the hazards of illicit discharges.[188] Third, the Annual Report must provide an assessment towards achieving the measurable goals established in the NOI. However, Watertown fails to establish effective measurable goals in its NOI, which results in only generalized assessments in the Annual Report. To establish compliance with state stormwater regulations, Watertown must ensure that each of its BMPs have measurable goals and, where appropriate, interim milestones as required by 40 CFR 122.34(d)(1). Finally, we commend Watertown's active IDDE detection and elimination activities. In one case, the Town reports that it has smoke-tested 12,135 linear feet of drain pipe. The SWMP should include more widespread reporting of such data and the establishment of percentage-based compliance and implementation goals for at least some BMPs.

- Watertown's Annual Report in regard to Control Measure #4 is incomplete. As discussed, the Annual Report must contain a discussion of selected BMPs, an assessment of the progress towards achieving the measurable goals, and a discussion of activities for the next reporting cycle.[189] Watertown fails to provide such information in the Annual Report for each of the five BMPs established for this control measure, and is therefore in violation of the terms of the General Permit.[190] In addition, the Annual Report indicates that Watertown has not made progress toward the development of a Town ordinance to

[186] See General Permit, Part II.F.
[187] See discussion of Watertown's NOI above.
[188] If any portion of this requirement is being met by efforts to implement control measures 1 or 2, the Annual Report should make a reference thereto.
[189] See General Permit, Part II.F.b,c,e.
[190] Town of Watertown NPDES PII Small MS4 General Permit Annual Report, p. 6.

regulate construction site runoff. EPA recommends that the ordinance or other regulatory ordinance be in place by PY1, so that site inspections, water quality testing and other enforcement procedures can be implemented prior to 2008.[191] To ensure compliance with the conditions of the General Permit, Watertown must accelerate the development and implementation of its construction site runoff program, including the identification of more effective and specific measurable goals, such as percentage-based compliance targets, as recommended by EPA. In addition, the construction site runoff program should include a water quality testing component, and a procedure for receipt and consideration of information received from the public.

- Watertown's Annual Report in regard to Control Measure #5 is incomplete. As discussed, the Annual Report must contain a discussion of selected BMPs, an assessment of the progress towards achieving the measurable goals, and a discussion of activities for the next reporting cycle.[192] We recognize that Watertown did not intend to initiate their post construction ordinance development process until Spring 2005. However, the Town does not provide a progress analysis for BMP 5B (Update BMPs and details), which was scheduled to occur in Spring 2003. In both cases, the Town is required to provide planned activities for PY2 in the Annual Report. It is also important, as detailed in our analysis of the Watertown NOI, to identify measurable goals for each BMP. Without measurable goals, the Annual Report fails to provide EPA and/or DEP with information regarding the Town's progress towards achieving them. Municipalities in the lower Charles River watershed have identified measurable goals in their NOIs for each interim step toward the development, implementation and enforcement of an ordinance.[193] Watertown must begin the process of identifying measurable goals for its post construction stormwater program to facilitate compliance with the general requirements of the Phase II program.

- Watertown's Annual Report in regard to Control Measure #6 is incomplete, although it nonetheless evidences a good faith effort to implement this control measure. The Town does not include in its Annual Report a BMP established in its NOI ("Update Emergency Management Plan").[194] As discussed, the Annual Report must contain a discussion of selected BMPs,[195] as well as a discussion of "any changes in identified BMPs or measurable goals."[196] The Annual Report also evidences the lack of measurable goals established for this control measure in the NOI. As discussed above, EPA recommends that municipalities identify percentage-based compliance goals for its pollution prevention/good housekeeping programs, such as targeted reductions in pesticide use and/or road salt use. While Watertown does provide measurable goals for some BMPs,

[191] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32. Also, the General Permit requires the development, implementation *and enforcement* of a construction site runoff ordinance or regulation. As such, Watertown must be in position to site inspect with procedures to "incorporate consideration of potential water quality impacts" as required by Part II.B.4.e of the General Permit.
[192] See General Permit, Part II.F.b,c,e.
[193] See Town of Wellesley's NOI.
[194] We recognize that this could be due to an administrative error, and hope the information will be corrected.
[195] General Permit, Part II.F.2.a.
[196] General Permit, Part II.F.2.f.

the Town does not provide any compliance or percentage-based targets. For example, in its Annual Report Watertown provides only general information about its inspections and maintenance of the stormwater system (e.g. "problem locations are reviewed as often as possible/needed") and its planned activities for the upcoming reporting cycle are overly general (e.g. "continue program"). The General Permit makes clear that the BMPs and measurable goals are critical for program development and implementation by the permittee, as well as EPA/DEP enforcement of the permit conditions.[197] So while Watertown has implemented several effective BMPs for this control measure, in order to ensure compliance with the conditions of the General Permit, state regulations and the CWA, the Town should identify more effective and specific measurable goals for each of its BMPs.

While municipalities have until the expiration of the first permit term (2008) to implement all elements of its Phase II SWMP, permittees must comply with the interim requirements of Phase II. These requirements include the establishment of effective BMPs and measurable goals (including, where appropriate, interim milestones) for each BMP,[198] and the submission of Annual Reports detailing ongoing implementation of its BMPs and compliance with its measurable goals.[199] Based on the information provided in its Annual Report, Watertown must update its Annual Report to include progress analysis, detailed program goals for upcoming permit years, and measurable goals for each BMP. Failure to do so will result in non-compliance with the terms and conditions of the General Permit.

[197] See General Permit, Part II.D-F. For example, Part II.D states that permittees must provide written notice to the EPA to replace a BMP, detailing why the former BMP was ineffective, expectations of the effectiveness of the new BMP, and an analysis of why the replacement BMP will achieve the goals of the BMP being replaced.
[198] 40 CFR 122.34(d)(1).
[199] General Permit, Part II.F

TOWN OF WELLESLEY

Wellesley discharges into six impaired receiving waters, four of which are impaired from pollution. The four waters that are impaired due to pollution are two segments of the Charles River (MA72-06 and MA72-07), and two tributaries of the Charles River (Fuller Brook, MA72-18, and Rosemary Brook, MA72-25). The two segments of the Charles are impaired by priority organics, nutrients, organic enrichment, pathogens, noxious aquatic plants, turbidity, and exotic species. Fuller Brook (MA72-18) is impaired by organic enrichment, other habitat alterations, pathogens, and noxious aquatic plants. Rosemary Brook (MA72-25) is impaired by nutrients, organic enrichment, pathogens, taste, odor and color, suspended solids, and turbidity.

In the Charles River segments, fecal coliform levels ranged from <10 – 800 cfu/100 mL in dry weather conditions and between 30 – 15,500 cfu/100 mL in wet weather conditions. Fecal coliform levels were generally lower in Rosemary and Fuller Brooks, ranging between <20 – 200 cfu/100 mL and between <40 – 4,000 cfu/100 mL, respectively. Elevated nutrients (particularly phosphorous) were present in the Charles River segments and Rosemary Brook, and a relatively high chlorophyll concentration (as high as 50.3 µg/L) was present in the Charles River segments. Elevated levels of PCB in carp have been found in the Charles River segments, leading to a consumption advisory and an assessment of non-support for fish consumption use. Low levels of dissolved oxygen are present in all four receiving waters, with levels as low as 3.9 mg/L (42% saturation) in Rosemary Brook. At least parts of both tributaries are assessed as non-support for primary and secondary contact recreational uses, while the Charles River segments are assessed as partial support.

As discussed above, Section IX of the General Permit requires that the permittee identify discharges to impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. Wellesley does not do so. Further, Wellesley does not identify how it will specifically control "pollutants of concern" into water bodies impaired by those pollutants as required by Part I.C.2 of the General Permit. As explained above, Wellesley has an affirmative duty to show that its program will ensure compliance with WQS. Wellesley has not done so. Further, the NOI is neither specific enough to provide measurable goals nor aggressive enough to ensure compliance with water quality standards by the spring of 2008. See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

Assessment of Wellesley NOI

Public Education (Minimum Control Measure #1)

The Town of Wellesley has identified BMPs for each required element of control measure #1, and has provided measurable goals for most of its BMPs. For example, BMP# 1.1 commits the Town to distributing educational brochures to "every residence" by the end of PY2. Several BMPs commit the Town to monitoring and reducing pollutants in receiving waters. There are nonetheless certain areas where the program could be improved. For example, in its 1999 analysis of the Wellesley SWMP, the Center for Watershed Protection (CWP) recommended extending the educational programs and materials to focus on pet waste, motor vehicles (car washing, oil changing,

and general maintenance), "hot spot" land uses (gas stations and car washes), and restaurants. Based on the information provided in the NOI, it does not appear that the Town implemented these recommendations. In addition, Wellesley should provide more specific information for those measurable goals that contain only general (i.e. non-measurable) goals. For example, BMP# 1.8 submits "Participation by as many groups as possible" as its measurable goal. The Town should amend its NOI to identify a certain number of groups or residents served.[200] BMPs# 1.4-1.6 also contain only general information and should be improved where possible. Notwithstanding that some minor improvements to its NOI should be adopted, Wellesley has thus far shown a good faith effort to implement this control measure in compliance with Phase II requirements.

Public Participation (Minimum Control Measure #2)
The Town of Wellesley has already accomplished many of the required elements for implementing control measure #2. For example, the Town has held public hearings to solicit input on its SWMP regulations, including its new site plan review bylaw. The Town has formed volunteer groups and initiated storm drain cleanup and stenciling programs. One area where the NOI needs minor improvement is the identification of measurable goals. While the Town has clearly demonstrated a good-faith effort in engaging the public in the development, implementation and enforcement of its SWMP, the Town has not provided information about, for example, when the storm drain stenciling program is scheduled for completion, and/or what Wellesley's specific public participation goals are.[201] Notwithstanding the need for some minor improvements to its NOI, Wellesley has shown a good faith effort to develop and implement this control measure in compliance with Phase II requirements.

Illicit Discharge Detection and Elimination (Minimum Control Measure #3)
The Town of Wellesley has already developed and implemented many of the program requirements of control measure #3, including a stormwater system map, IDDE regulations, an outfall inspection and monitoring program, and an illicit discharge elimination strategy. Wellesley has committed to implementing a public employee training program by the winter of 2005. We believe that Wellesley has met the NOI requirements of Phase II for this control measure.

Construction Site Runoff (Minimum Control Measure #4)
The Town of Wellesley has already developed and implemented many of the program requirements of control measure #4, including the adoption of erosion and sedimentation control regulations, erosion and sedimentation control measures for site plan reviews, and the implementation of inspection and enforcement procedures in Fall 2004. It is unclear from its NOI whether these programs include procedures for the receipt and consideration

[200] EPA provides four (4) "Appropriate Measurable Goals" for complying with the requirements of minimum control measure #1, two of which identify specific percentages of the public reached and in compliance with the recommendations of the public education program. See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-22.
[201] This could be accomplished by identifying a percentage goal for communities participating in the cleanup programs, or a percentage goal for neighborhoods covered by stormdrain watch programs, as recommended by EPA. See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-24.

of information submitted by the public, as required by the General Permit, to engage the public construction project oversight. To ensure compliance with the General Permit, Wellesley must confirm that it has such procedures. Wellesley should also amend its measurable goals for its inspection and enforcement program (BMP# 4.3) to include percentage rates of compliance by construction operators, as recommended by EPA.[202]

Post Construction Site Runoff (Minimum Control Measure #5)

The Town of Wellesley has already developed and implemented many of the program requirements of control measure #5, including the amendment of Town zoning bylaws to include post construction runoff regulations and an inspection and BMP maintenance program. Wellesley's identification of measurable goals could be improved for this control measure. For example, EPA has determined that "appropriate" measurable goals for this control measure include the identification of specific program goals, such as "reduced percent of new impervious surfaces associated with new development projects," and "improved clarity and reduced sedimentation of local waterbodies."[203] While Wellesley has approved and installed water quality BMPs, the Town does not provide specific compliance or monitoring goals with which to gauge program effectiveness. We recommend that Wellesley amend its NOI to include such goals.

Pollution Prevention/Good Housekeeping (Minimum Control Measure #6)

The Town of Wellesley, based on its NOI, has an exceptional pollution prevention/good housekeeping program. The Town has already developed and implemented many of the program requirements of control measure #6, including the identification of thirteen (13) BMPs for pollution prevention and good housekeeping alone. The program includes 100% attendance by DPW employees to the Town's employee pollution prevention training by PY3. Spill response personnel are to participate in one deployment exercise annually. The program includes operations and maintenance review procedures. To ensure compliance with the General Permit and state regulations, Wellesley should include measurable compliance goals in its NOI for some of its pollution prevention BMPs. EPA has determined that "appropriate" measurable goals include percentage-based compliance goals, such as "a certain percentage reduction in floatables discharged."[204] Programs to promote litter reduction, proper animal waste disposal, reductions in pesticide use, reductions in road salt use and reductions in salt runoff from salt storage sites are additional examples of EPA-recommended BMPs.[205] In its 1999 analysis of the Wellesley SWMP, the Center for Watershed Protection (CWP) recommended that Wellesley purchase a vacuum sweeper, increase the frequency of sweeping on residential streets to capture road sand, modify the Town snow dump to provide infiltration or water quality treatment of plowed snow, and increase the frequency of catch basin cleaning to at least twice per year. There is no evidence in the NOI to suggest that Wellesley implemented such changes to its pollution prevention/good

[202] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32.
[203] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-35.
[204] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-37.
[205] *Id*.

housekeeping programs. We urge the Town to implement these changes to ensure that its programs reduce pollution to the maximum extent practicable.

Assessment of Wellesley Annual Report

Wellesley's Annual Report, with some exceptions, evidences a good-faith effort to implement the requirements of Phase II. The Town reports progress in most program areas, and has achieved many of the general goals established in its NOI. Wellesley is moving ahead with the substantive parts of the Phase II SWMP, including the development of stormwater IDDE regulations and the drafting of erosion and sedimentation control regulations for construction sites. While its site plan review program is somewhat behind schedule, the Town commits to preparing a draft copy of proposed zoning bylaw changes for review and comment in PY2. Wellesley also plans to utilize water quality modeling software to identify priority areas for water quality testing. While Wellesley's SWMP is better than most in terms of establishing measurable goals and interim milestones for each selected BMP, this effort could be improved in some areas to ensure compliance with the terms and conditions of the General Permit.

Additional comments regarding Wellesley's SWMP, as evidenced by its Annual Report, include:

- Wellesley's Annual Report in regard to Control Measure #1 evidences a good faith effort to implement this control measure. The Town has made significant progress in several key areas, including the dissemination of stormwater information via direct mail and the press. In some cases, the Town provides progress analysis unrelated to the measurable goals established for that particular BMP. For example, for its pesticide awareness program the Town establishes a measurable goal of "reduction in pesticides measured in impaired waterways." However, the progress analysis fails to discuss reductions in measured pesticides, and the planned activities section mentions only "continue with outreach." Similarly, for BMP# 1.7 the Town establishes "reduction of fecal coliform measured in Fuller Brook" as its measurable goal, but does not reference water quality testing in its Annual Report. Without establishing a baseline it is unclear how the Town plans on achieving this measurable goal. As discussed, the Annual Report must contain a discussion of selected BMPs,[206] as well as a discussion of "any changes in identified BMPs or measurable goals."[207] Part II.D.2 of the General Permit requires that any changes to BMPs must be requested in writing to the EPA and MA DEP, and include a description of why the change was necessary. We recognize that Wellesley's water quality testing software is not yet operational; however, the Town must still report and commit to progress towards its measurable goals in its Annual Report.

- Wellesley's Annual Report in regard to Control Measure #2 evidences significant progress toward the effective implementation of this control measure. Although the implementation of some BMPs is behind schedule, the Report details active programs in several recommended and required areas, including the holding of public meetings and stormdrain stenciling. One area that must be updated is the Town's stream cleanup

[206] General Permit, Part II.F.2.a.
[207] General Permit, Part II.F.2.f.

program. Stream cleanup is an element of BMP# 2.3; however, the Annual Report does not provide a progress analysis or planned activities for a stream cleanup program. We recommend that the Town address these areas as soon as possible to ensure compliance with the terms and conditions of the General Permit. It is also important that the revised implementation schedules established in the Annual Report are met to ensure compliance with the General Permit.

- Wellesley's Annual Report in regard to Control Measure #3 evidences a good faith effort to implement this control measure. The Report details active programs in several recommended and required areas, including the development of stormwater mapping, IDDE regulations, outfall inspections and water quality monitoring. It is critical that Wellesley adopt its stormwater regulations as soon as possible because its SWMP implementation strategy puts its construction and post construction programs on hold until these regulations are finalized. In addition, to ensure compliance with the terms and conditions of the General Permit, the Town should include more information in its planned activities section and confirm that it has identified measurable goals for each selected BMP. As discussed, the Annual Report must provide an assessment towards achieving the measurable goals established in the NOI, and without measurable goals the reporting requirements of the General Permit cannot be met. The SWMP should include more widespread reporting of specific compliance and planned activity data and the establishment of percentage-based compliance and implementation goals for at least some BMPs. Otherwise, we commend Wellesley's active IDDE detection and elimination activities.

- Wellesley's Annual Report in regard to Control Measure #4 evidences a good faith effort to implement this control measure. While the adoption of Wellesley's site plan review bylaws and inspection and enforcement procedures is behind schedule, the Report establishes that the Town is reviewing drafted erosion and sedimentation control regulations and will begin the process of adopting these secondary measures expeditiously. It is critical that the Town meet the revised schedules established by the Annual Report so that site inspections, water quality testing and other enforcement procedures can be implemented prior to 2008.[208] The construction site runoff program must include a water quality testing component, and a procedure for receipt and consideration of information received from the public.

- Wellesley's Annual Report in regard to Control Measure #5 reports an overall delay in the implementation of this control measure pending the adoption of stormwater regulations and amendment of the zoning bylaw to include site plan review. We encourage the Town to begin the process of adopting post construction control strategies, particularly an ordinance and site plan review procedures , as soon as possible.

[208] EPA recommends that the ordinance or other regulatory ordinance be in place by PY1, so that site inspections, water quality testing and other enforcement procedures can be implemented prior to 2008. See also "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32. The General Permit requires the development, implementation *and enforcement* of a construction site runoff ordinance or regulation. As such, Watertown must be in position to site inspect with procedures to "incorporate consideration of potential water quality impacts" as required by Part II.B.4.e of the General Permit.

- Wellesley's Annual Report in regard to Control Measure #6 evidences a good faith effort to implement this control measure. The Report evidences active programs in several key areas, including employee training, inspection of existing controls, catch basin cleaning and street sweeping. The pollution prevention/good housekeeping program could be improved by the identification of measurable goals for each BMP. As discussed above, EPA recommends that municipalities identify percentage-based compliance goals for its pollution prevention/good housekeeping programs, such as targeted reductions in pesticide use and/or road salt use. While Wellesley identifies such goals (i.e. pesticide use reduction), the Town does not establish specific compliance or implementation goals of any kind. The General Permit makes clear that the BMPs and measurable goals are critical for program development and implementation by the permittee, as well as EPA/DEP enforcement of the permit conditions.[209] Wellesley nonetheless operates an aggressive pollution prevention and good housekeeping program that, with a few adjustments, could be a model for other municipalities.

While municipalities have until the expiration of the first permit term (2008) to implement all elements of its Phase II SWMP, permittees must comply with the interim requirements of Phase II. These requirements include the establishment of effective BMPs and measurable goals (including, where appropriate, interim milestones) for each BMP,[210] and the submission of Annual Reports detailing ongoing implementation of its BMPs and compliance with its measurable goals.[211] Based on the information provided in its Annual Report, Wellesley has made significant progress toward the implementation of its SWMP. The Town must develop and implement its construction and post construction strategies as soon as possible to ensure compliance with the General Permit.

[209] See General Permit, Part II.D-F. For example, Part II.D states that permittees must provide written notice to the EPA to replace a BMP, detailing why the former BMP was ineffective, expectations of the effectiveness of the new BMP, and an analysis of why the replacement BMP will achieve the goals of the BMP being replaced.
[210] 40 CFR 122.34(d)(1).
[211] General Permit, Part II.F

TOWN OF WESTON

Weston discharges into one segment of the Charles River (Segment MA72-07, between Chestnut Street in Needham and the Watertown Dam) and over a dozen tributaries to the Charles River, several of which are part of the watershed for Cambridge's drinking water supply. According to DEP's Massachusetts Year 2004 Integrated List of Waters, uses of Segment MA72-07 are impaired for priority organics, nutrients, organic enrichment/low dissolved oxygen, pathogens, and noxious aquatic plants, turbidity and noxious species. In its Charles River Watershed 1997/1998 Water Quality Assessment Report, DEP found that during wet weather, levels of fecal coliform ranged from 20cfu/100mL to 78,000 cfu/100mL in Segment MA72-07. Elevated nutrients and high chlorophyll concentrations were also found in this segment. Elevated levels of PCB were found in carp and elevated concentrations of pesticides, heavy metals, and/or PCM measurements were found in sediment sampling in MA72-07.

As discussed above, Section IX of the General Permit requires that the permittee identify discharges to impaired segments as a priority, and indicate how stormwater controls will be implemented in these areas. Weston does not do so. Further, Weston does not identify how it will specifically control "pollutants of concern" into water bodies impaired by those pollutants as required by Part I.C.2 of the General Permit. As explained above, Weston has an affirmative duty to show that its program will ensure compliance with WQS. Weston has not done so. Further, the NOI is neither specific enough to provide measurable goals nor aggressive enough to ensure compliance with water quality standards by the spring of 2008. See http://www.epa.gov/npdes/pubs/measurablegoals.pdf for guidance for developing measurable goals.

Assessment of Weston NOI

Public Education (Minimum Control Measure #1)

The Town of Weston has identified BMPs for each required element of control measure #1, and has provided measurable goals for its BMPs. For example, BMP#s 1-1 and 1-3 establish percentage distribution goals for education materials. The Town has already educated fifth graders about stormwater and distributed a media packet to local press. To ensure compliance with the conditions of the General Permit and state regulations, Weston should include in its NOI measurable goals that enable regulatory agencies to gauge program effectiveness. For example, EPA has determined that appropriate measurable goals for this control measure include: "A certain percentage of restaurants no longer dumping grease and other pollutants down storm sewer drains [and a] certain percentage reduction in litter or animal waste detected in discharges."[212] While the Weston NOI evidences a good faith effort to develop and implement Phase II requirements for this control measure, the Town must provide measurable goals to enable EPA and/or DEP "to gauge permit compliance *and program effectiveness*."[213]

[212] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-22.
[213] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-24.

Public Participation (Minimum Control Measure #2)
Weston's public participation program, according to its NOI, does not provide adequate opportunity for the general public to play an active role in both the development and implementation of the Town's SWMP.[214] First, the Town must ensure that all public involvement activities comply with state public notice requirements at MGL Chapter 39 Section 23B and local public notice requirements.[215] Weston does not provide an opportunity for the public to participate in the implementation and review of the SWMP, and its NOI fails to identify a BMP for this requirement or a measurable goal for its implementation.[216] Other municipalities on the lower Charles River have planned or held public hearings to allow the public to participate in the development of each element of the SWMP (e.g. IDDE regulations, site plan review, etc.). Weston should immediately amend its NOI to include public meetings and/or hearings. Second, Weston has established BMPs for few of the best management practice areas recommended by EPA for this control measure, such as volunteer water quality monitoring, storm drain stenciling, community clean-ups, partnership with citizen watch groups, and "Adopt A Storm Drain" programs. To ensure compliance with the conditions of the General Permit and state regulations, Weston's NOI should include BMPs in these areas. Third, Weston must establish measurable goals for each of its BMPs, including where appropriate, interim milestones.[217] As currently drafted, Weston's NOI does not provide sufficient measurable goals to enable EPA and/or DEP to gauge permit compliance and programs effectiveness.

Illicit Discharge Detection and Elimination (Minimum Control Measure #3)
The Town of Weston is in the process of developing and implementing, or has already implemented, many of the program requirements of control measure #3, including a stormwater system map, IDDE regulations, outfall screening, water quality monitoring, and illicit discharge elimination. The Town has established effective measurable goals, in some cases with very specific program implementation goals, for most of its BMPs for this control measure. Weston's NOI has not established a BMP for the training of public employees, businesses and the general public about the hazards associated with illicit discharges and improper waste disposal, as required by Part II.B.3.d of the General Permit.[218] To ensure compliance with the General Permit and state regulations Weston must amend its NOI to include a public employee training BMP, and indicate whether the

[214] "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-22 ("EPA believes that the public can provide valuable input and assistance to a regulated small MS4's municipal storm water management program and, therefore, suggests that the public be given opportunities to play an active role in both the development and implementation of the program.").
[215] See also General Permit, Part II(B)(2).
[216] See General Permit, Part II.B.2.a.
[217] This could be accomplished by identifying a percentage goal for communities participating in the cleanup programs, or a percentage goal for neighborhoods covered by stormdrain watch programs, as recommended by EPA. See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-24.
[218] We recognize that Weston has submitted BMPs for conducting outreach to residents and businesses (see BMPs 1-1 and 1-3); however, the Town must also train its public employees and should indicate in its NOI whether its outreach efforts under control measure #1 encompass the requirements of control measure #3 (i.e. brochures must discuss IDDE).

general public and businesses have been informed about illicit discharges via BMPs in other control areas.

Construction Site Runoff (Minimum Control Measure #4)

The Town of Weston fails to establish effective measurable goals and interim milestones for the development, implementation and enforcement of its Construction Site Runoff Control Program. Presumably, BMP 4-1 will include each required element of the program; however, there are no measurable goals or interim milestones provided for the development and implementation of this BMP. EPA recommends that permittees set percentage-goals for program compliance, including confirmation of improved water quality.[219] Other municipalities have established BMPs and measurable goals for each element of program development (e.g. development of ordinance, on-site erosion and sedimentation control plans, inspections and enforcement).[220] In its 1999 analysis of the Weston SWMP, the Center for Watershed Protection recommended that the reduction of impervious surfaces should be a major focus area of the development of stormwater regulations and guidance. While Weston sets forth the elements of a potentially effective construction runoff review process, the NOI must contain the BMPs that Weston will implement for each minimum control measure, and the measurable goals for each of the BMPs "including, as appropriate, the months and years in which [Watertown] will undertake required actions, including interim milestones and the frequency of the action."[221] Thus, Weston must identify more specific measurable goals to enable regulators to ensure compliance with the General Permit and to ensure that its BMPs reduce the discharge of pollutants from small MS4s to the "maximum extent practicable."[222] The NOI should include incremental steps toward the development, implementation and enforcement of its bylaw, and measurable goals (including where appropriate percentage compliance goals) for each step.[223]

Post Construction Site Runoff (Minimum Control Measure #5)

Weston must provide further information for the implementation of its post construction runoff controls to ensure compliance with the General Permit and state regulations. Presumably, BMP 4-1 will include each required element of the program; however, there are no measurable goals or interim milestones provided for the development and implementation of this BMP. Weston must provide measurable goals for each BMP to enable EPA and/or DEP to ensure that Phase II controls are developed, implemented and enforced, and to comply with 40 C.F.R. §122.34(d)(1). The EPA has determined that "appropriate" measurable goals for this control measure include the identification of specific program goals, such as "reduced percent of new impervious surfaces associated with new development projects," and "improved clarity and reduced sedimentation of local waterbodies."[224] As such, the NOI should include measurable goals not just for the

[219] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32.
[220] See, e.g., Town of Wellesley NOI.
[221] See 40 C.F.R. §122.34(d)(1).
[222] See 314 C.M.R. 3.06(11)(b)(4).
[223] See City of Cambridge comments above.
[224] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-35.

development of its programs, but for the effective implementation and enforcement of its controls to gauge program effectiveness and permit compliance, as recommended by EPA. Monitoring BMPs should also include procedures for water quality testing, improvement and reporting.[225] In addition, in its 1999 analysis of the Weston SWMP, the Center for Watershed Protection recommended that the reduction of impervious surfaces should be a major focus area of the development of stormwater regulations and guidance. We recommend that Weston amend its NOI to include BMPs and measurable goals in these areas, as required by the General Permit and state regulations.

Pollution Prevention/Good Housekeeping (Minimum Control Measure #6)
The "pollution prevention and good housekeeping" minimum control measure requires *both* MS4 maintenance (including inspection) and pollution prevention. EPA has determined that "appropriate" measurable goals for this minimum control measure include percentage-based compliance goals, such as "a certain percentage reduction in floatables discharged."[226] Programs to promote litter reduction, proper animal waste disposal, reductions in pesticide use, reductions in road salt use and reductions in salt runoff from salt storage sites are additional examples of EPA-recommended BMPs.[227] Although Weston has several pollution prevention and good housekeeping procedures planned or in place, including catch basin cleaning, street sweeping, waterway maintenance, its program should be more robust to ensure that the Town reduces pollution to the "maximum extent practicable." For example, Weston's plan to install computerized spreader equipment for its roadway de-icing program is an appropriate BMP. However, neither the Section F timeline nor the measurable goals identified provide information about when such efforts will be completed, or what pollution prevention goals will be achieved. In order to achieve pollution prevention to the maximum extent practicable, the Town should provide percentage goals for reductions in floatables discharged, reductions in sand/salt use, and improved catch basin cleaning. In addition, Weston does not identify a BMP for developing and implementing a public employee training program, as required by Part II.B.6.a of the General Permit.[228] Weston should amend its NOI to include more robust pollution prevention programs and effective measurable goals. Such improvements are critical to ensure that the City reduces pollution to the "maximum extent practicable" and to enable EPA and/DEP to enforce Phase II of the NPDES program.

Assessment of Weston Annual Report

Weston's Annual Report, with some exceptions, evidences a good-faith effort to implement the requirements of Phase II. The Town reports progress in most program areas, and has achieved many of the general goals established in its NOI. Weston is moving ahead with the

[225] See General Permit, Part II.B.5.c.
[226] See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-37.
[227] *Id*.
[228] EPA recommends that the employee training program should detail how to incorporate pollution prevention/good housekeeping techniques into activities not directly related to stormwater management, such as park and open space maintenance, fleet and building maintenance, and new construction and land disturbances. See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-36.

substantive parts of the Phase II SWMP, including the development of stormwater IDDE regulations and stormwater system mapping. Weston does not provide a progress analysis for the development of its erosion and sediment control bylaw (scheduled for Spring 04), which is critical to the development of its construction and post construction runoff control programs. Even if the Town is behind schedule for this element of its SWMP, it must provide a progress analysis in its Annual Report. In addition, the Annual Report provides further evidence that Weston could improve its identification of measurable goals and interim milestones for each selected BMP to ensure compliance with the terms and conditions of the General Permit.

Additional comments regarding Weston's SWMP, as evidenced by its Annual Report, include the following:

- Weston's Annual Report in regard to Control Measure #1 evidences a good faith effort to implement this control measure. The Town has made significant progress in several key areas, including the dissemination of stormwater information via direct mail to 93% of all Weston businesses and residences. We urge Weston to continue its public education by establishing measurable goals and enacting aggressive programs to achieve those goals. For example, the Center for Watershed Protection recommended in 1999 that the Town of Weston target specific groups as part of its public education programs, such as lawn care companies, septic tank users, and small farm operationses. We encourage Weston to implement such BMPs in the future.

- Weston's Annual Report in regard to Control Measure #2 evidences significant progress toward the effective implementation of the BMPs identified in the NOI; however, the report also makes clear that the Town must improve its public involvement programs to ensure compliance with Phase II. Weston does not provide an opportunity for the public to participate in the implementation and review of the SWMP, and its SWMP fails to identify a BMP for this requirement or a measurable goal for its implementation.[229] Weston should also establish BMPs for a greater number of the best management practice areas recommended by EPA for this control measure, such as volunteer water quality monitoring, storm drain stenciling, community clean-ups, partnership with citizen watch groups, and "Adopt A Storm Drain" programs. We commend the Town for adding BMP# 2-6, which implements a stream team survey of Seaverns Brook. To ensure that its stormwater program reduces pollutants to the maximum extent practicable, the Town should implement BMPs that more aggressively engage the public for the development, implementation and enforcement of its SWMP.

- Weston's Annual Report in regard to Control Measure #3 evidences a good faith effort to implement this control measure. The Report details active programs in several recommended and required areas, including the development of stormwater mapping, IDDE regulations, outfall inspections and water quality monitoring. Weston must establish a BMP for the training of public employees, businesses and the general public about the hazards associated with illicit discharges and improper waste disposal, as

[229] See General Permit, Part II.B.2.a.

required by Part II.B.3.d of the General Permit.[230] We encourage Weston add this program to its SWMP, and provide a progress report in its next Annual Report.

- Weston's Annual Report in regard to Control Measure #4 evidences some utilization of effective program strategies, including the implementation of several sound stormwater program review procedures, such as permit and project review by the Planning Board and the Conservation Commission. However, Weston does not provide sufficient information (including measurable goals and interim milestones) about the development, implementation and enforcement of a comprehensive construction site runoff program. Weston has made an effort to revise BMP# 4-1, which pertains to the adoption of a bylaw or ordinance, but its revision does not go far enough.[231] We encourage Weston to establish measurable goals and interim milestones for the development and implementation of a comprehensive construction site runoff bylaw and/or ordinance to ensure compliance with the terms and conditions of the General Permit. In addition, the Report does not provide a discussion of activities for the next reporting cycle for most of the selected BMPs. Annual Reports must contain an assessment of the progress towards achieving the measurable goals identified in the NOI, and "a discussion of activities for the next reporting cycle."[232]

- Weston's Annual Report in regard to Control Measure #5 reports an overall delay in the development and implementation of a comprehensive post construction runoff program. While the Weston DPW enforces a runoff control policy, the development, implementation and enforcement of an erosion and sediment control bylaw has yet to begin. We encourage Weston to begin the process of adopting post construction control strategies, particularly an ordinance and site plan review procedures , as soon as possible. The process should include the identification of measurable goals and interim milestones designed to ensure program implementation and enforcement.

- Weston's Annual Report in regard to Control Measure #6 evidences the operation or planned operation of several sound pollution prevention and good housekeeping procedures, including catch basin cleaning, street sweeping, waterway maintenance. However, in order to achieve pollution prevention to the maximum extent practicable, the Town should provide percentage goals for reductions in floatables discharged, reductions in sand/salt use, and improved catch basin cleaning. In addition, Weston has not identified a BMP for development and implementation of a public employee training

[230] We recognize that Weston has submitted BMPs for conducting outreach to residents and businesses (see BMPs 1-1 and 1-3); however, the Town must also train its public employees and should indicate in its NOI whether its outreach efforts under control measure #1 encompass the requirements of control measure #3 (i.e. brochures must discuss IDDE).

[231] EPA recommends that the ordinance or other regulatory ordinance be in place by PY1, so that site inspections, water quality testing and other enforcement procedures can be implemented prior to 2008. See also "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-32. The General Permit requires the development, implementation *and enforcement* of a construction site runoff ordinance or regulation. As such, Weston must be in position to site inspect with procedures in place to "incorporate consideration of potential water quality impacts" as required by Part II.B.4.e of the General Permit by 2008.

[232] See General Permit, Part II.F.2.a-g.

program, as required by Part II.B.6.a of the General Permit.[233] Weston should improve its SWMP to include more robust pollution prevention programs and effective measurable goals for this control measure.

While municipalities have until the expiration of the first permit term (2008) to implement all elements of its Phase II SWMP, permittees must comply with the interim requirements of Phase II. These requirements include the establishment of effective BMPs and measurable goals (including, where appropriate, interim milestones) for each BMP,[234] and the submission of Annual Reports detailing ongoing implementation of its BMPs and compliance with its measurable goals.[235] Based on the information provided in its Annual Report, Wellesley has made significant progress toward the implementation of its SWMP. The Town must develop and implement its construction and post construction strategies as soon as possible to ensure compliance with the General Permit.

[233] EPA recommends that the employee training program should detail how to incorporate pollution prevention/good housekeeping techniques into activities not directly related to stormwater management, such as park and open space maintenance, fleet and building maintenance, and new construction and land disturbances. See "Stormwater Phase II Compliance Assistance Guide," United States Environmental Protection Agency (March 2000), p. 4-36.
[234] 40 CFR 122.34(d)(1).
[235] General Permit, Part II.F

ATTACHMENT II

INDEPENDENT ASSESSMENTS OF NOTICE OF INTENTS (NOIs) AND ANNUAL REPORTS FOR TOWN OF BROOKLINE , TOWN OF DEDHAM AND CITY OF WALTHAM

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11 February 2005

NPDES Storm Water General Permit-Town of Brookline, MA

Critical Evaluation of Notice of Intent for Discharges from MS4s
The Bioengineering Group, Salem, MA

Based on the information put forth in the NOI, Brookline's Storm Water Management Program fails to reduce the discharge of pollutants to the maximum extent practicable, ensure that discharges will not cause an instream exceedance of water quality standards or specifically identify control measures and BMPs that will control pollutants of concern.

Background and Intent

Today, storm water is the most significant source of pollution to the Charles River watershed, causing severe degradation to water quality and in turn affecting fisheries, aquatic flora, recreational uses and natural beauty. Ensuring compliance with established water quality standards from MS4 storm water discharges is the primary purpose of the NPDES General Permit issued jointly by the Massachusetts DEP and the Federal EPA. According to the EPA approximately 44% of the water quality impairment problem results from non-point sources of pollution, reflective of runoff from impervious surfaces in urban areas. When collected in a municipal storm sewer system and deposited into receiving waters this urban runoff becomes a point source of pollution. Moreover, illicit connections between sanitary sewers and storm sewers are frequently to blame for elevated bacterial counts in urban receiving waters. The Town of Brookline has issued a Notice of Intent documenting its proposed Storm Water Management Program designed to address the water pollution issue. The intent of this paper is to assess the effectiveness of the proposed program as expressed in the NOI to ensure compliance with the General Permit's requirements that the program reduce the discharge of pollutant to the maximum extent practicable, ensure that discharges will not cause an instream exceedance of water quality standards, and specifically identify control measures and BMPs that will control pollutants of concern.

Issues

1. Illicit Connections to the Storm Sewer System

There are at least four water bodies in the Town of Brookline that are currently listed as impaired in the 1997/1998 Massachusetts Water Quality Assessment Report; Charles River, Muddy River, Sawmill Brook and Halls Pond. Saw Mill Brook is listed as impaired for organic enrichment/low DO, pathogens, taste, odor, color, and noxious aquatic plants, many of which are associated with stormwater. The Massachusetts Surface Water Quality Standard, 314 CFR 4.00 for fecal coliform in Class B Waters is 200 cfu/100ml. The 1997/1998 Massachusetts Water Quality Assessment Report cites fecal coliform bacteria ranging from 520 -7000 cfu/100ml and elevated nutrient levels for phosphorus and ammonia nitrogen in Saw Mill Brook. For the Muddy River, and subsequently the Charles River, the Town is under a Finding of Violation of Massachusetts water quality standards by the EPA. Samples at 17 sites surveyed by citizen

Roger Frymire during May and September 2003 yielded results for fecal coliform bacteria ranging from 991 to 26,000 cfu/100ml. More recently, in August of 2004, samples were taken at random from 12 storm drain manholes in the northern part of Brookline by Frymire Ten of the twelve samples registered fecal coliform bacteria levels in excess of 50,000 cfu/100ml and one exceeded 100,000 cfu/100ml. Toilet paper found at several of the sites confirmed the obvious that there are illicit sanitary sewer connections in the system.

Based upon the 2003 data, an EPA Order for Compliance was prepared requiring that illicit sewer connections and other contributing sources be identified and eliminated by April 23, 2005. In addition to sanitary sewer connections, there are most likely a host of other illicit connections from commercial and industrial sources that will need to be eliminated in order to reduce pollutant discharge to the maximum extent practicable.

2. Non-Point Source Contamination and Control

In addition to illicit connections, there are pervasive and insidious impairments to water quality representative of urban stormwater runoff from streets, parking lots, fertilized lawns, etc. that are difficult to control without an aggressive strategy. The condition of runoff from expansive impervious surfaces in a diverse urban environment is considerably degraded by nutrients, pathogens, hydrocarbons, metals and pesticides, as demonstrated by the EPA's National Urban Runoff Program in urban areas across the United States and in numerous other studies of stormwater quality. Elevated pollutant levels that have been identified in the Charles River Watershed 1997/1998 Water Quality Assessment Report include the following, all of which are associated stormwater.

Phosphorus concentrations in the Muddy River as high as 0.72 mg/L
Ammonia-nitrogen in the Muddy River as high as 4.9 mg/L
Chlorides ranging from 95- 220 mg/L
Conductivity (as high as 860 uS/cm
Dissolved oxygen levels as low as 1.0 mg/L vs. the state standard 5.0 mg/L for warm water fisheries
Pathogens
Taste, Odor, Color – all at an objectionable level
Noxious Aquatic Plants – indicative of excessive nutrient concentrations

Standards have not as yet been established for most of these pollutants, however, individually and collectively they create environmental, aesthetic, and public health problems that substantially diminish the quality of life in urban areas.

Source control that replicates the natural hydrologic cycle is one of the most effective strategies for dealing with urban runoff. By collecting and infiltrating precipitation as near to where it falls as possible runoff is reduced, groundwater is recharged, and pollutants are removed through physical, biological and chemical processes in the soil and vegetation. This can greatly reduce the concentration of pollutants in a storm sewer system that becomes a point source

when emptying into receiving waters. Traffic islands, median strips, lawns and open areas such as parks and golf courses can be re-graded and retrofitted to store and infiltrate stormwater while also supporting attractive plant communities. Both the Massachusetts DEP and the EPA advocate this approach. It is both more environmentally effective and more cost effective than the more traditional infrastructure-based approach that depends exclusively on catch basins and piping systems.

A comprehensive program to achieve water quality standards must first identify and prioritize all of the prospective impairments, such as illicit discharges and contaminated runoff, determine their origins and develop an integrated strategy to mitigate them. Obviously, with its Findings of Violation and Order for Compliance the EPA has identified illicit sanitary sewer connections as the top priority for pollution control in Brookline and has provided a specific prescription to correct the problem by April 23, 2005. However, this is only one component of a complex pollution issue. Unfortunately, as summarized in the comments below, the Brookline NOI Stormwater Management Program Summary reflects a series of unrelated activities in the six minimum control measures as listed in the NPDES Phase II requirements with no specific focus on pollutants of concern and their mitigation. It is unlikely that this program, as stated in the NOI, will be effective in ensuring compliance with water quality standards, particularly for existing conditions retrofit on municipal lands.

Comments on the Brookline Storm Water Management Program Summary

1. Public Education

BMP 1A Informational Brochures

An annual distribution of brochures with utility bills is proposed. Unless the information is targeted to this specific audience with relevant information about the storm water management program, little tangible results can be expected to occur from this activity. Properly planned, however, this could be an effective strategy for keeping the public informed about the program but it must be linked to program implementation to address specific issues and demonstrate accomplishments as well as provide contacts for those who might wish to get involved.

BMP 1B Town Website

This could be a very useful tool for all involved to both educate and inform. The existing Town website provides some general storm water information under the DPW department but does not connect it to an overall strategy for cleanup. It should include an overview of the existing problems in Brookline and the plan to correct them. Specifics on the implementation program would also be very helpful, to include graphics illustrating the stormwater network, problem areas and ongoing correctional activities, and be a clearinghouse for information about meetings, contacts, resources etc.

BMP 1C Infoline

A digital infoline would be unlikely to provide the specific information that most callers would be seeking. The telephone number of a knowledgeable individual would be more effective.

BMP 1D
Local Access TV – Annual Public Service Announcements
Annual PSAs on television will become repetitive and will accomplish little if they change only once each year. A message produced annually can provide only a limited amount of information about the program that is better communicated through static communication devices like posters. Links to Local Access TV should capitalize on the dynamic nature of the program and provide current information on what is being done and where, including postings of all upcoming meetings and activities.

BMP 1E
Posters/Videos in Schools
Posters and videos will only be effective if they are linked to the curriculum and involve classroom discussion and take-home information. Involving the children is an excellent way of getting the message to the parents, much like anti-smoking and seatbelt use.

Comments
The objective of Public Education should be to change public behavior in a manner that will specifically benefit the water quality improvement program. Although Brookline has listed various venues for distributing information to the public, no linkage is included to other aspects of the program to ensure that the information is timely and effective. Also, it is imperative that specific target audiences are identified since information requirements and methods of communication vary greatly among interest groups. There are many topics that the public can be educated on relating to water pollution control but they need to be linked to ongoing activities in the stormwater management program. In essence, people need to know what the program is all about, what the major polluting agents are and their origins, what controls need to be put in place and by whom, how they can become involved and what would be their specific roles and responsibilities. They also need to be kept informed of results that are being achieved.

2. Public Participation
BMP 2A
Local Advertisements – Annual PSAs
Although this is not actually public participation, local advertisements using a variety of media can and should be used to invite the citizenry to public meetings where they become informed of the issues and, as a result, become involved in the program.

BMP 2B
Local Clean-ups
This is an ongoing, existing activity that can be useful for enticing groups and individuals to become involved but it should be looked at as an opportunity to inform them of the larger issue and get them more involved in the water quality improvement program.

BMP 2C
Community Hotline
A hotline would link to BMP 1C. It should be incorporated into to the various outreach attempts like brochures and the website with the telephone number prominently displayed and with a knowledgeable individual at the end of the line when a call is made.

BMP 2D
Storm Drain Stenciling
This would be an extension of an existing program in Brookline that has merit for bringing people together, and like BMP 2B, can serve as an introduction to more extensive involvement. There is one drawback to storm drain stenciling in that people who do not understand what is happening will occasionally seek out a storm drain that is not stenciled to dispose of their waste. Storm drain stenciling needs to be linked to the public education program to complete the cycle of integrated programs.

Comments
Brookline's storm drain stenciling program and proposals for a hotline and annual public service announcements appear as isolated strategies for public involvement with limited benefits to water quality and frequently involve only a small, select group of individuals. Water quality is everybody's responsibility. For this reason, the public needs to be included from the very beginning in identifying the issues and problems and setting goals and objectives for the program as well as being full participants in program implementation. They need to be informed (public education) and involved (ongoing activities) in order to affect the necessary change in public perception and behavior that is necessary to achieve water quality goals. Service clubs, media outlets, church groups, scouts, businessmen, town boards and school groups need to be represented in an aggressive citizen's action committee that will ensure broad based participation by community members.

3. Illicit Discharge Detection and Elimination
BMP 3A
Storm Drain System Map
Brookline has a map that it will update as needed according to the NOI. The map should be made as complete and thorough as it can be as soon as possible to ensure that any and all illicit connections within the system can be identified. This map should be in Geographic Information System (GIS) format and cross-referenced with other utilities, specifically the sanitary sewer system to identify possible conflicts. In GIS format, the storm drain system can easily be posted on the website and readily updated with pertinent information.

BMP 3B and 3D
Illicit Discharge Program and Ordinance

An illicit discharge ordinance is proposed in the NOI to be in place within 1 year and that objective has been met under Section 8.25.1 of the Town By-Laws. The purpose of the ordinance "is to eliminate non-storm water discharges to the Town of Brookline's Storm Drain System." Objectives of the ordinance are comprehensive although they do not mention any detection strategy that uses monitoring to identify pollutants of concern and likely sources. The ordinance assigns the responsibility to administer, implement and enforce the regulations to the DPW.

Comments

Brookline currently has a map of the storm drain system but it is not apparent whether it is complete. There is an I &I program and ordinance in place but there does not appear to be any comprehensive detection strategy where parameters in the water are being used to indicate concentrations of specific pollutants and the likely sources to be investigated. Without a clear plan for identifying and eliminating sources of pollution, it is unlikely that water quality standards can be achieved. This is clearly evidenced by the current violation notice for coliform bacteria issued by the EPA. The illicit sewer connection issue, for the Charles River watershed, is likely to be resolved soon because of the EPA Order for Compliance by April 23, 2005, however, there are many other pollutants of specific concern and sources of contamination that will need to be identified and corrected in order to meet water quality standards. This is an opportunity to inform the community through public education of the potential role they can play in identifying illicit discharges and thereby to make effective use of the proposed "hotline." The eyes and ears of the community can greatly increase the likelihood of illicit discharge detection especially when they know what to look for and how to report an infraction. This is a clear example of the possibilities for linking Public Education, Public Participation and Illicit Discharge Detection and Elimination.

4. Construction Site Runoff Control

BMP 4A

Site Runoff Control Ordinance

According to the NOI, the Site Runoff Control Ordinance would be in place within a year and that objective has been accomplished. It is included within the Public Health and Safety By-Law, Article 8.25 Storm water Management, Section 8.25.2 Erosion and Sediment Control. The requirement for an Erosion and Sediment Control plan is for parcels of 20,000 sq. ft. or larger, which is more restrictive than the federal requirement of one acre. Performance standards are comprehensive and refer directly to the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas dated March 1997 or the latest version thereof.

BMP 4B

Erosion and Sediment Control Plan Reviews

Erosion and Sediment Control Plans are required by the Runoff Control Ordinance for parcels 20,000 sq. ft. and greater with specific requirements and performance standards. An Erosion and Sediment Control Review by the DPW is triggered with the submission of a building

application. Activity on parcels of less than 20,000 sq. ft. is not exempt from these provisions and although no permit is required, DPW Review and approval must be obtained.

BMP 4C
Construction Inspection
Inspections by the Commissioner of Public Works or his designated agent are required by the ordinance at six critical steps in the site development process. The purpose of the inspections, as stated, is "to determine the overall effectiveness of the control plan and the need for additional control measures."

BMP 4D
Hotline for non-compliant activities
This hotline can be the same as the public participation and illicit discharge hotlines with a knowledgeable individual available to answer questions. Like other activities, the hotline must link to public information alerting citizens of the issues.

Comments
Brookline has developed an effective ordinance that links its performance standards to the state guidelines for erosion and sediment control. The controls used on construction sites are typically temporary ones that address short-term erosion problems associated with grading and related site disturbances that produce a lot of sediment and construction related pollution. The more long-term pollution issues associated with continuing site runoff are dealt with through post construction runoff control BMPs typically installed toward the end of the construction activity.

5. Post Construction Runoff Control
BMP 5A
Post Construction Runoff Control Ordinance
The NOI states that a Post Construction Runoff Control Ordinance would be in place within one year and that objective has been achieved. Section 8.25.3 of the Storm Water Management By-Laws addresses Post Construction Runoff management. It expands upon the information in Item 4 (above) on erosion and sediment control within the state guidelines. Design requirements and performance standards for post construction include runoff volume and peak discharge as well as pollution reduction as defined in the Massachusetts Stormwater Management Policy dated March 1997, as amended. What is needed is a comprehensive, watershed-based, Town-wide plan to address runoff from disturbed areas (such as runoff from new development and redevelopment projects as well as from all Town owned and managed facilities such as roads, parking areas and golf courses) for the long-term once the construction phase is completed. There are at least ten pollutants of concern mentioned in various reports by EPA the U.S. Army Corps of Engineers and the Charles River Watershed Association, including nutrients, pathogens and pesticides that are part of the potential pollutant stream from

impervious surfaces causing water impairment that will need to be considered when selecting BMPs.

BMP 5B
Design Plan/BMP Reviews
Reviews of development plans and related BMPs by both the DPW and the Conservation Commission are proposed as an extension of the ordinance. A checklist is needed for both applicants and reviewers that would both illuminate and facilitate the review process.

BMP 5C
O&M of Runoff Control Structures and Practices
O&M is proposed to be part of the Stormwater Management ordinance. The Storm Water Management Bylaw places all O&M responsibility on the developer. There is no mention of oversight to ensure the long-term integrity of these systems. O&M needs to be an integral part of the comprehensive stormwater management plan that includes BMPs on municipally controlled lands as well. BMPs must be continuously functioning to be effective. Otherwise they will not meet the water quality objectives they were designed to achieve. This can be a costly proposition and, for this reason, needs to be planned and budgeted for within the municipal operating plan.

BMP 5D
Inspection of Runoff Control Structures and Practices
Regularly scheduled inspections linked to water quality monitoring are essential for ensuring that the BMP systems in place in the field continue to function as designed.

Comments
Brookline's Post Construction Runoff Control Ordinance that conforms to the state's Stormwater Management Policy is an excellent first step toward ensuring compliance with water quality standards. It should apply to the Town who has responsibility for managing polluted runoff from municipal facilities as described below in Item 6. What must be avoided is a site-by-site solution that never considers the context of the pollution issues. A comprehensive plan would establish a watershed context for runoff control making full use of natural systems and processes and cooperating with other municipalities that occupy the same watershed. This approach uses source controls such as those described in the Issues section above to minimize runoff and pollution and promote localized groundwater recharge as recommended in the Massachusetts MS4 program guidelines. It diminishes reliance on structural methods of stormwater management, i. e., detention basins, catch basins, manholes and pipes, thus reducing capital and O&M costs. The most significant benefit is improvement in water quality by mimicking the natural hydrologic processes of interception, infiltration, evapotranspiration, percolation, soil-water interaction and ground water recharge.

6. Pollution Prevention and Municipal Good Housekeeping in Municipal Operations

BMP 6A

Annual DPW Employee Training Program

There is little information in the NOI to determine the focus of such training but it appears from other BMPs listed under this category that the focus is very narrow, most likely on DPW employee responsibilities for ensuring clean water.

BMP 6B

Municipal Maintenance Activities

This BMP calls for an annual inspection and review of maintenance activities by the DPW which is very appropriate, especially if it is linked to the overall direction established by a watershed-based storm water management plan.

BMP 6C

Household Hazardous Waste Program

This is an ongoing program that has the potential to be linked to the larger program through information distribution and public education.

Comments

Pollution Prevention and Good Housekeeping, as described in the Massachusetts Small MS4 Program description, specifies a comprehensive nonpoint source runoff program for all municipal operations. This implies preventing and/or reducing polluted runoff from areas such as municipal streets, parking lots, lawns, roofs, parks, golf courses and maintenance facilities. Furthermore, techniques for infiltration and groundwater recharge into areas such as re-graded median strips, lawns around municipal facilities and other open areas are recommended whenever feasible. The Brookline NOI calls for an annual DPW training program, annual inspection of maintenance activities and a household hazardous waste program that is already in place. This is not adequate. No mention is made as to how pollution prevention and good housekeeping addresses the critical water quality issues associated with municipal operations except for the obvious benefits of the household hazardous waste program. This would imply that the many of the pollutants associated with stormwater will not be addressed by the program.

Assigning a coordinator and including all town departments and outside cooperators in a comprehensive, watershed-based storm water management plan, confronting all of the issues, with roles and responsibilities and continual information exchange should be an essential component of the water quality improvement program. Annual training for <u>all</u> participants on program implementation, methods and interdepartmental cooperation would ensure that the system is in order, problems are being corrected and the critical job of water quality improvement is getting done.

Conclusion

Information in the Brookline NOI does not indicate that there is an aggressive program in place or being contemplated to mitigate ongoing pollution. It fails to meet the General Permit's requirements that the program reduce the discharge of pollutant to The Maximum Extent Practicable, ensure that discharges will not cause an instream exceedance of water quality standards, and specifically identify control measures and BMPs that will control pollutants of concern for the following reasons:

1. Public Education

The objective of Public Education should be to change public behavior in a manner that will specifically benefit the water quality improvement program. Although Brookline has listed various venues for distributing information to the public, no linkage is included to other aspects of the program to ensure that the information is timely and effective.

2. Public Participation

Water quality is everybody's responsibility but few are encouraged to become involved in the current Brookline program. For effective representation, the public needs to be included from the very beginning in identifying the issues and problems and setting goals and objectives for the program as well as being full participants in program implementation.

3. Illicit Discharge Detection and Elimination

Brookline currently has a map of the storm drain system but it is apparently not complete. There is an I &I program and ordinance in place but there does not appear to be any comprehensive detection strategy where parameters in the water are being used to indicate concentrations of specific pollutants and the likely sources to be investigated. Without a clear plan for identifying and eliminating sources of pollution it is unlikely that water quality standards can be achieved as indicated by the current EPA violation order.

4. Post Construction Runoff Control

The ordinance as written addresses this issue on a site by site basis when it should also be viewed holistically as the aggregate of all sites that are contributing polluted runoff to the MS4 system and ultimately to receiving waters as a point source of pollution. This includes the very large percentage of impervious cover represented by Town-owned infrastructure such as roads and parking lots that is not dealt with at all in the NOI.

5. Pollution Prevention and Municipal Good Housekeeping in Municipal Operations

The NOI completely overlooks the fact that Pollution Prevention and Good Housekeeping as described in the Massachusetts Small MS4 Program description specifies a comprehensive nonpoint source runoff program for all municipal operations. This includes preventing and/or minimizing polluted runoff from all municipally controlled lands. There is no evidence in the NOI that pollution reduction is being addressed to the maximum extent practicable.

A much more aggressive approach will be needed to adequately eliminate the pollutants of concern, particularly on municipal property and ensure compliance with water quality standards. To be most effective, this approach should include a comprehensive stormwater management plan prepared in a watershed context in cooperation with all interested publics and adjacent communities that occupy the same watershed with adequate funding for implementation.

Report of Lisa D. Eggleston, P.E.
Eggleston Environmental
Dedham NOI and 2004 Annual Report
February 11, 2005

I have conducted a review of the Town of Dedham's Notice of Intent (NOI) submittal for coverage under the NPDES Phase II General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). I have also reviewed the March 2004 Annual Report submitted by the town on its NPDES Phase II Storm Water Management Program.

Coverage under the General Permit requires submittal of the NOI and development of a storm water management program in accordance with Part I.E. of the General Permit. Due to the abbreviated format of the NOI and Annual Report forms, the rationale behind the selection of individual best management practices (BMPs) and detailed descriptions of the proposed practices in Dedham's storm water management program are not provided. My sense is that Dedham is clearly making an effort to address stormwater concerns. However, while most of the individual BMPs identified in the NOI are worthwhile, they are relatively generic and are not specifically focused on reducing identifiable sources of storm water pollution. In addition, I am not convinced that the BMPs identified in the NOI are sufficient to meet the requirements of the General Permit that they specifically address pollutants of concern and that they reduce the discharge of pollutants to the maximum extent practicable, and that they ensure compliance with water quality standards.

Dedham's storm water discharges to several 303(d) impaired water bodies: Mother Brook; the Neponset River and the Charles River. All three water bodies are impaired with respect to pathogens and organic enrichment/low dissolved oxygen. Mother Brook is also impaired for nutrients and taste/odor/color; the Neponset River for priority organics, metals and oil & grease; and the Charles River for priority organics, nutrients, noxious plants and turbidity. Part I.C.2 of the General Permit stipulates that the storm water management program must specifically identify control measures and BMPs to control the discharge of these pollutants of concern (those causing the impairment) to ensure that the discharges will not cause instream exceedances of the water quality standards. Discharges to these water bodies also need to be prioritized in the storm water management plan.

While Dedham's NOI does indicate that these water bodies are impaired, it neglects to identify pathogens as one of the parameters of concern in all three receiving waters, and it does not identify BMPs specifically aimed at reducing the discharge of bacterial pollutants from the relevant drainage areas.

Further, there is an approved Total Maximum Daily Load (TMDL) allocation for the Neponset River for pathogens, which states that the storm water management programs

for tributary communities "must include, at a minimum, identification and implementation of storm water BMPs, including increased frequency of street sweeping and catch basin cleaning, public education programs, adoption of pet waste pick up laws and, where ever possible, the diversion of runoff to pervious areas for infiltration." (Massachusetts DEP, *Final TMDLs of Bacteria for the Neponset River Basin*, May 2002) None of the TMDL BMPs listed in section 7 of the NOI address bacterial sources and, while the Dedham plan does include public education components, they do not appear to be specifically aimed at pathogen control (e.g. through pet waste management). The plan also indicates that street sweeping will continue at the current frequency of once per year and catch basin cleaning every three years.

Overall, I would suggest that the storm water management plan needs to focus more specifically on new initiatives to address the sources of these pollutants to storm water. The fact that several of the receiving waters in the Dedham area are impaired with respect to water quality indicates that current practices are not sufficient to reduce pollutant discharges and that a more aggressive effort is needed to meet the requirements of the General Permit.

My specific comments on the control measures included in Dedham's storm water management program are outlined below.

1. Public Education and
2. Public Education and Outreach
(I have combined my comments on these two areas as there is a good deal of overlap between the two, particularly in the BMPs listed in Dedham's NOI)

The goal of the public education component of the program should be to make both residents and non-residents (e.g. business owners in the community) aware of the effect that storm water can have on receiving waters and the steps they can take to reduce storm water pollution. The public participation program should get people involved in implementing the storm water management plan and committing to reducing the pollutants discharged in storm water.

- While the BMPs listed in Dedham's NOI under these two categories are all positive steps, I do not believe they go far enough in educating the public about the importance of storm water pollution. Simply making people aware of the significance of storm water pollution and their own impact on it is one of the most effective and least costly forms of pollutant source control, particularly when it is coupled with efforts to get the public involved in raising awareness. There are numerous resources available in the public sector for educating the public about the importance of pet waste management, appropriate vehicle washing and landscaping and lawn care practices, septic system maintenance, proper disposal of waste oil and household hazardous wastes, good housekeeping practices for various business types, etc.

- Appointment of an advisory committee to help develop and implement the storm water management plan can be a useful way to involve members of the public and disseminate information, but it should be done early enough that the committee can have a meaningful role. The first year annual report indicates that this has yet to be done.

- In addition to publishing a listing of department names and contact information, I suggest establishing a telephone hotline or email link to enable the public to report dumping incidents or other pollutant discharges and encouraging them to do so.

- While the stenciling of catchbasins by DPW personnel with a "don't dump" message will help educate the public, a greater benefit will be seen if the public is actually involved in doing the stenciling, e.g. through scout troops, "stream teams", neighborhood groups and the like.

3. Illicit Discharge Detection and Elimination

In order to eliminate non-storm water discharges from the drainage system, MS4s are required under the General Permit to develop, implement and enforce an illicit discharge detection and elimination program. The program must include mapping of storm drain outfalls, an ordinance to prohibit non-storm water discharges, a plan to detect and eliminate non-storm water discharges, and the education of employees, businesses and the general public about the hazards of illegal discharges and the proper disposal of waste, as well as other appropriate BMPs.

- Dedham's NOI includes development of a mapping system and location of all visible outfalls, but does not include measures to detect and eliminate illegal connections. At a minimum, all storm drain outfalls should be visually inspected to determine whether there is any evidence of illegal discharges. Depending on the outcome of the outfall screening, further investigation may be warranted.

- From the annual report, it is evident that the TV inspections to identify illegal connections (listed as a BMP under #6) refer to inspections of the sewers to identify illegally connected storm drains, not the reverse. While this is a sound sewer management practice, it will have no benefit to storm water quality. Coupled with the outfall screening described above, however, the same technology can be used in the drain system to identify illegal sanitary (or laundry) connections to the storm drains.

- The Annual Report indicates that Dedham has recently enacted a Storm water Bylaw, which appears to be comprehensive and well designed. I note, however, that it does not include the requisite prohibition of non-storm water discharges to the municipal drainage system and a mechanism for enforcement of such.

- Adoption of a hazardous waste day collection program should also incorporate a public education campaign to encourage participation and inform residents about the potential impacts of improper disposal.

4. Construction Site Runoff Control

The General Permit requires MS4 regulators to develop, implement and enforce a program to reduce runoff pollution from all construction projects disturbing one or more acres of land. The program must require the use of erosion and sediment controls and proper disposal of construction wastes, procedures for municipal review, and other BMPs as appropriate.

- This requirement should also be addressed in Dedham's storm water bylaw, but does not appear to be at present. Enforcement of the requirements can be a key issue, and a drain on municipal resources. Again, public awareness of the issues and the availability of a hotline or email link for reporting of pollutant discharges can be an inexpensive and useful tool.

5. Post-Construction Runoff Control

MS4s are also required to develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb one acre or more. The program must include structural and/or non-structural controls to prevent or minimize water quality impacts, an ordinance or other regulatory mechanism to address post-construction runoff; and ensure adequate long-term operation and maintenance of BMPs.

In addition, the Charles River is listed as "medium" on the Massachusetts Water Resources Commission's *Stressed Basins in Massachusetts*, based on the loss of recharge within the drainage area. The storm water management plan must therefore also minimize the loss of annual recharge to the groundwater within the basin from both new development and redevelopment projects, including areas outside of the jurisdiction of the Wetlands Protection Act.

- The BMPs listed in the NOI are limited to two measures pertaining to subdivision regulation and development of a storm water policy to encourage groundwater recharge. Since Dedham is largely built out, it will also be important to consider how storm water improvements can be incorporated in redevelopment projects, as well as municipal projects such as roadway improvements. Dedham's Stormwater Bylaw provides the opportunity to seek improvements in private redevelopment projects but not municipal ones.

- I have not reviewed the town's new storm water policy encouraging groundwater recharge (assuming it is separate from the stormwater bylaw), but I would presume it does so in a manner similar to the State's Stormwater Management Policy. (Hopefully, its jurisdiction extends beyond projects subject to the

Wetlands Protection Act). Again, consideration should also be given to incorporating recharge in redevelopment projects, e.g. through downspout disconnection, and looking for other opportunities to "disperse and infiltrate" runoff that is currently discharged through the storm drains.

6. Municipal Good Housekeeping

In accordance with the General Permit, each MS4 is required to develop and implement a program to prevent or reduce pollutant runoff from municipal operations, including employee training.

- Dedham's NOI includes a number of O&M practices that appear to be ongoing (street sweeping and catch basin cleaning) but does not look to improve the effectiveness of these operations or identify other O&M programs that may be beneficial.

- The plan also does not address any other municipal facilities such as municipal parking lots, vehicle (fleet) maintenance, sand/salt storage, snow disposal areas and the like. There are often opportunities for structural and non-structural improvements that can be made to minimize runoff pollution from these facilities.

7. BMPs for Meeting TMDL

When storm water discharges from any part of the MS4 contribute, either directly or indirectly to a 303(d) listed (impaired) water body, the storm water management program must describe how the program will control the discharge of the pollutants of concern and ensure that the discharges will not cause instream exceedances of water quality standards.

- One of the control measures identified in the NOI is the development of a landscaping policy, but it is unclear whether this policy would apply to municipal properties or private ones. Ideally, Dedham should strive to reduce the use of fertilizers, pesticides and herbicides on its own property, e.g. through Integrated Pest Management (IPM) practices, and also to educate town residents to do likewise.

- As mentioned previously, the Town needs to develop control measures to reduce bacterial runoff, since several of the receiving waters are impaired with respect to pathogens. None of the proposed control measures currently proposed address this issue. If it doesn't already exist, the town should adopt and enforce a pet waste pick up ("pooper scooper") law and educate the public about the importance of proper pet waste management. There may also be opportunities to reduce bacterial pollution by discouraging the congregation (and feeding) of waterfowl near sensitive receiving waters, and improving current practices with respect to sewer and septic system maintenance.

- Item #7d refers to the installation of "some" new drainage structures (catchbasins with innovative technology) by the town to reduce TSS loads, but does not indicate the magnitude of this effort, or where the units would be installed. It would make sense to employ such units in areas determined have the highest priority with respect to sediment control. Equipping catchbasins with oil and gas trapping hoods should also be considered, particularly in the areas tributary to the Neponset River.

In conclusion, it is evident from the program outlined in the NOI and the Annual Report that Dedham taking positive steps toward improving storm water quality. However, I believe that more effort in the areas addressed herein is warranted in order to fully comply with the terms of the General Permit.

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NPDES Storm Water General Permit-City of Waltham, MA

Critical Evaluation of Notice of Intent for Discharges from MS4s
The Bioengineering Group, Salem, MA

Background and Intent

Today, storm water is the most significant source of pollution in the Charles River watershed, causing severe degradation to water quality and in turn affecting fisheries, aquatic flora, recreational uses and natural beauty. Ensuring compliance with established water quality standards from MS4 stormwater discharges is the primary purpose of the NPDES General Permit issued jointly by the Massachusetts DEP and the Federal EPA. According to the EPA approximately 44% of the water quality impairment problem results from non-point sources of pollution, including runoff from impervious surfaces in urban areas. When collected in a municipal storm sewer system and deposited into receiving waters this urban runoff becomes a point source of pollution. Moreover, illicit connections between sanitary sewers and storm sewers are frequently to blame for elevated bacterial counts in urban receiving waters. The City of Waltham is currently under a Findings of Violation by the EPA with an Order for Compliance because of sanitary sewer discharge from MS4s into the Charles River and its tributaries. The intent of this paper is to assess the effectiveness of the proposed program as expressed in the NOI to ensure compliance with the General Permit's requirements that the program reduce the discharge of pollutant to the maximum extent practicable, ensure that discharges will not cause an instream exceedance of water quality standards and specifically identify control measures and BMPs that will control pollutants of concern.

Issues

1. Illicit Connections to the Storm Sewer System

In addition to the EPA's Notice of Violation for Fecal coliform pollution in the Charles River, Beaver Brook in the City of Waltham is currently listed as impaired in the 1997/1998 Massachusetts Water Quality Assessment Report. The Massachusetts Surface Water Quality Standard, 314 CFR 4.00 for fecal coliform in Class B Waters is 200 cfu/100ml. Listed impairments in the 1997/1998 Massachusetts Water Quality Assessment Report for Beaver Brook include fecal coliform bacteria ranging from 480-4400 cfu/100ml, low dissolved oxygen and elevated nutrient levels for phosphorus and ammonia nitrogen. Furthermore, the City is under a Finding of Violation of Massachusetts water quality standards by the EPA. Samples at 19 sites surveyed by EPA between June 25 and October 29, 2003 yielded results for fecal coliform bacteria ranging from 510 to >200,000 cfu/100ml. The subsequent EPA Order for Compliance requires that illicit sewer connections and other contributing sources be identified and eliminated by April 23, 2005. In addition to sanitary sewer connections, there are most likely a host of other illicit connections from commercial and industrial sources that will need to be eliminated in order to meet water quality standards.

2. Non-Point Source Contamination and Control

In addition to illicit connections, there are pervasive and insidious impairments to water quality representative of urban stormwater runoff that are difficult to control without an aggressive strategy. One example is a large plume of sediment, observed by citizen Roger Frymire during a heavy rainstorm, coming from a site on the south side of the Charles River near the Elm Street Bridge in the summer of 2004. The condition of runoff from developed sites and especially impervious surfaces in a diverse urban environment is considerably degraded by contaminants such as sediments, nutrients, pathogens, hydrocarbons, metals and pesticides, as demonstrated in numerous studies of stormwater quality, including the National Urban Runoff Program conducted nation-wide by the EPA. Pollutants of concern that have been identified in the Charles River Watershed 1997/1998 Water Quality Assessment Report include the following:

Phosphorus concentrations as high as 0.16 mg/L
Ammonia-nitrogen as high as 0.68 mg/L
Dissolved oxygen levels as low as 2.0 mg/L vs. the state standard 5.0 mg/L
Pathogens
Taste, Odor, Color – all at an objectionable level

Standards have not as yet been established for most of these pollutants and there are many more that have not been recorded, however, individually and collectively they can create environmental, aesthetic, and public health problems.

Source control that replicates the natural hydrologic cycle is one of the most effective strategies for dealing with urban runoff. By collecting and infiltrating precipitation as near to where it falls as possible runoff is reduced, groundwater is recharged, and pollutants are removed through physical, biological and chemical processes in the soil and vegetation. This can greatly eliminate the concentration of pollutants in a storm sewer system that becomes a point source when emptying into receiving waters. Traffic islands, median strips, lawns and open areas such as parks and golf courses can be re-graded and retrofitted to store and infiltrate stormwater while also supporting attractive plant communities. Both Massachusetts DEP and EPA advocate this approach. It is both more environmentally effective and more cost effective than the more traditional infrastructure-based approach that depends exclusively on catch basins and piping systems.

A comprehensive program to achieve water quality standards must first identify and prioritize all of the prospective impairments such as illicit discharges and impervious surface runoff, determine their origins and develop an integrated strategy to mitigate them. Obviously, with its Findings of Violation and Order for Compliance the EPA has identified illicit sanitary sewer connections as the top priority for pollution control in Waltham and has provided a specific prescription to correct the problem by April 2005. However, this is only one component of a complex pollution issue. Unfortunately, as summarized below, the Waltham NOI Storm Water Management Program Summary reflects a series of unrelated activities in the six <u>minimum</u> control measures specified in the NPDES Phase II requirements with no specific focus on

pollutants of concern and their mitigation. Without an integration mechanism to tie all of the program components together it will be difficult for Waltham to achieve its water quality objectives by eliminating pollutants of concern to the maximum extent practicable.

Comments on the Waltham Storm Water Management Program Summary

1. Public Education and Outreach

In addition to the 5 BMPs listed below that Waltham has identified on its NOI under Public Education, the City has prepared a Storm Water Management Plan that places the BMPs in their proper context. Accordingly, public education is recognized as one of the most important aspects of a storm water management program and the two main benefits of public education are stated as "greater community support and greater compliance." Furthermore, the plan states that the storm water program will be more effective when the public becomes more aware of their personal responsibility to improve water quality. In addition to the five BMPs proposed there are two existing BMPs that relate to public education. They are:

1. A Household Hazardous Waste Website
2. Office Park Targeted Communications (addressing parking lot sweeping and catch basin maintenance)

The five BMPs selected by the City to implement the Public Education and Outreach Program are as follows:

BMP 1
Recycling Department Website
An operational website is proposed, however, recycling has only marginal impacts on water quality and considering the range of issues that need to be dealt with, recycling should be regarded as a minor priority.

BMP 2
Office Park Targeted Communications
This is a continuation of an ongoing program although it should be expanded to include big box stores and shopping centers. No mention is made in the NOI about expanding the program to specifically address pollutants in non-point source runoff that become point sources when discharged into receiving waters from an MS4. Office park runoff frequently contains high nutrient levels, pesticides, hydrocarbons and sediments that are frequently removed and deposited in receiving waters by first flush events of ½ inch of rainfall or more. The current program emphasizing parking lot sweeping and catch basin maintenance is only a partial solution and will not ensure compliance with water quality standards.

BMP 3
NPDES Phase II Brochure

The objective for this brochure, as described in the Storm Water Management Plan, is to explain the Phase II program and how citizens can help achieve the goals of the program. A major problem with this approach is that the City has not completed an assessment of the issues that are causing water quality degradation so it is unable to prioritize these issues through program goals in a comprehensive strategy before it decides on the specific BMPs that will correct the problems in a logical sequence.

BMP 4
Floodplain Management Brochure
According to the Storm Water Management Plan, this information is targeted at residents that border the receiving waters. The brochure will inform residents how their activities within the floodplain can impact water quality and flooding problems. It is unlikely that this will result in significant benefit to water quality unless with specific techniques that the homeowner can use to minimize polluted runoff from his/her property. A similar brochure could be considered for properties in the riverfront and wetland buffer zones.

BMP 5
Illicit Discharge Brochure
The Storm Water Management Plan describes this as a water bill insert in the second year of the program. It will explain how illicit discharges impact water quality and how Waltham plans to address the problem city-wide. Although the EPA Order for Compliance, mentioned under the Issues above, anticipates that all sanitary sewer discharges to the MS4s will be eliminated by April of 2005, there will continue to be illicit sources from accidents or failing infrastructure that require cleanup. This brochure, combined with an appropriate public involvement program can educate the public and enlist their support to identify and report illicit connections. Like everything else, however, this activity needs to be integrated into the comprehensive strategy that is targeting City-wide compliance with water quality standards.

Comments
The objective of Public Education should be to change public behavior in a manner that will specifically benefit the water quality improvement program. Although Waltham has listed various venues for distributing information to the public, no linkage is included to other aspects of the program to ensure that the information is timely and effective. There are many topics that the public can be educated on relating to water pollution control but they need to be linked to program goals and ongoing activities. In essence, people need to know what the program is all about, what the major polluting agents are and their origins, what controls need to be put in place and by whom, how they can become involved and what would be their specific roles and responsibilities. They also need to be kept informed of results that are being achieved.

Public Participation
BMP 10
Earth Day Celebration

This is intended to be an expansion of an existing activity in Waltham where the DPW will use Earth Day as an opportunity to distribute some of the brochures developed for Phase II permit compliance. As a public participation program, this has very limited value. It would be better categorized as public education. As stated in the Storm Water Management Plan, "local citizens can provide valuable input and assistance during both the development and implementation stages of a water quality initiative." This activity supports the need of the people of Waltham to be both informed and involved in order for there to be an effective program that will reverse water resource impairment.

BMP 11
Stream Clean up
Annual stream cleanup events are an ongoing activity that the city plans to expand to cover all of its receiving waters in the five-year permit period. These are activities that bring together civic-minded individuals in the effort to clean up the environment, however, one activity per year will not yield sufficient progress on water quality improvement. These gatherings should be used as opportunities to inform the participants of the larger storm water management program and to recruit volunteers that can be involved on an ongoing basis in projects like Adopt-A-Stream.

BMP 12
Adopt-A-Stream
This is a new program proposed for Waltham that will establish groups for three of the City's streams. This can be a very effective project to provide ongoing stream condition monitoring and reporting of violations and illicit connections and, optimally, there should be one for each of the tributaries in Waltham. These groups also get involved in stream stabilization, riparian restoration and habitat improvement among other things. A well-organized Adopt-A-Stream program can be a very productive public participation program with positive water quality improvement results.

BMP 13
Catch Basin Stenciling
This is another project like stream clean up (BMP 11) that can be used as a recruiting tool. Catch basin stenciling is not always effective since some well-intentioned individuals that are not informed will simply look for a catch basin that is not stenciled to dispose of their waste. This applies as well to the cast iron "Do Not Dump" message. A program like this one needs to be linked to the Public Information program to ensure that people are informed about the process.

Comments
Waltham's storm drain stenciling program and proposals for Adopt-A-Stream, Stream Cleanup and Earth Day appear as isolated strategies for public involvement with varying benefits to water quality and frequently involve only a small, select group of individuals. Water quality is everybody's responsibility. For this reason the public needs to be included from the very beginning in identifying the issues and problems and setting goals and objectives for the

program as well as being full participants in program implementation. They need to be informed (public education) and involved (ongoing activities) in order to affect the necessary change in public perception and behavior that is necessary to achieve water quality goals. Service clubs, media outlets, church groups, scouts, businessmen, town boards, school groups, etc. need to be represented in an aggressive citizen's action committee that will ensure broad based participation by community members.

2. Illicit Discharge Detection and Elimination

BMP 14
Mapping
Waltham is in the process of updating their existing topographic mapping records with a new city-wide GIS system that will include storm drain and sanitary sewers. This will be an excellent tool to identify cross-connections but also to evaluate non-point source pollution in concert with modeling software and to develop mitigation measures through source control.

BMP 15
Illicit Discharge Ordinance
Waltham has committed to have an ordinance in place to identify and remove illicit discharges within the first year of the program. Unfortunately, this has not happened fast enough for the EPA since the City is under a Notice of Violation for discharging sewage into the Charles River from its MS4. Under an EPA Order for Compliance the City must identify all illicit sewer connections and remove them by April 23, 2005. The ordinance will continue to be of use, however, as an essential tool to deal with future illicit connection issues.

BMP 16
Illicit Discharge Detection Program
The DPW plans to develop an illicit discharge program that involves inspection of at least 40 outfalls per year. This program would be a far more effective if it were linked to the Adopt-A-Stream program where stream and outfall conditions are being constantly monitored city-wide and illicit discharges and other pollution problems could be identified and corrected almost as they occur.

Comments
Without a comprehensive plan for identifying and eliminating sources of pollution, it is unlikely that water quality standards can be achieved. This is clearly evidenced by the current violation notice for coliform bacteria issued by the EPA. The illicit sewer connection issue, for the Charles River watershed, is likely to be resolved soon because of the EPA Order for Compliance by April 23, 2005; however, there are many other pollutants of specific concern and sources of contamination that will need to be identified in order to meet water quality standards. This is an opportunity to inform the community through public education of the potential role they can play in identifying illicit discharges. The eyes and ears of the community can greatly increase the likelihood of illicit discharge detection especially when they know what

to look for and how to report an infraction. This is a clear example of the possibilities for linking Public Education, Public Participation and Illicit Discharge Detection and Elimination.

4. Construction Site Runoff Control

BMP 17

Construction Site Runoff Control Ordinance

The City of Waltham has ordinances for Storm Water Management and Erosion and Sediment Control that it plans to enforce in response to NPDES Phase II requirements. According to the Storm Water Management Plan, the ordinance specifies several acceptable methods of runoff and erosion control without going into detail. Also mentioned are the erosion control guidelines established by the City's Conservation Commission. These guidelines specifically reference the Massachusetts Department of Environmental Protection Storm Water Management Policy Handbook and Best Management Practice Standards.

To have an effective site runoff program, the City needs to adopt the Conservation Commission's guidelines for all construction activity not just that within 100 feet of a wetland. This could be done through the adoption of a by-law or ordinance. These are more comprehensive guidelines that emphasize source control and natural systems and processes as opposed to the traditional infrastructure based program. As such they reduce peak runoff while capturing sediment and treating pollutants in a distributed manner on-site. This is also the approach recommended in the Massachusetts Small MS4 Program guidelines.

BPM 18

Conservation Commission Rules and Regulations

Waltham proposes to continue to review projects and uphold the Massachusetts Wetlands Protection Act and the Massachusetts Stormwater Management Policy. As stated above, the Con Com guidelines should be applied to all new construction activity for effective water pollution control through the adoption of a by-law or ordinance.

BMP 19

Review Existing Runoff Control Ordinance

Waltham plans to review the existing regulations and revise as needed. This is a necessary step to ensure effective water pollution control.

BMP 20

Plan Review Process

This process is intended to ensure that plan review by the City Engineering Department addresses all aspects of the updated runoff control ordinance. It is to include a checklist for both applicants and reviewers to ensure compliance with policies.

Comments

The Waltham Conservation Commission has developed effective guidelines that link its performance standards to the state guidelines for erosion and sediment control. Unfortunately, these apply only to projects within 100 feet of a designated wetland. To be most effective in assuring compliance with water quality standards city-wide, Waltham needs to incorporate the BMPs and storm water management practices from the state guidelines into its revised Construction Site Runoff Control Ordinance.

5. Post Construction Runoff Control

BMP 21
Plan Rules and Regulations
The NOI states that Waltham will continue to enforce the existing rules and regulations. This is not acceptable. As described in the Storm Water Management Plan, these rules and regulations focus on controlling the quantity of storm water runoff through detention basins, leaching basins and underground storage tanks. No mention is made of water quality except for those projects within 100 feet of a wetland that fall under Con Com jurisdiction.

BMP 22
Enhance Engineering Guidelines
The NOI states that Waltham will implement improved engineering design guidelines. Further explanation in the Storm Water Management Plan states that the improvements will focus on water quality BMPs by applying the Massachusetts Storm Water Management Policy on a city-wide basis. These changes are to be applied on all projects that are executed in the City. Incorporating the revised guidelines into a comprehensive watershed based plan for managing the infrastructure as well as the human and natural resources will greatly enhance the City's ability to achieve its water quality goals.

BMP 23
Runoff Control Ordinance
Amendments to the City's ordinances and By-laws to reflect BMP 22 are to be developed and proposed to the City Council in the third year of the permit. In part these changes will enhance the City Engineers authority to inspect and enforce post construction runoff controls. Because of the need to ensure that BMPs continue to function as designed, this will be a very important component of the City's anti-pollution effort, especially when dealing with controls on private land.

BMP 24
BMP Monitoring and Maintenance Plan
The NOI proposes to develop and maintain a BMP database. It is further described in the Storm Water Management Plan as the regular inspection and cleaning of BMPs to ensure that they operate as designed. The database will be used to schedule inspections and track cleaning operations at public and private facilities for each BMP.

This is a very important and necessary activity to ensure control of pollutants causing impairment.

BMP 25
Inspector Training Program
This program is proposed for development in the second year and implementation in the third year. It will update the City's inspection staff on changes to the storm water management policy and provide them with guidelines for doing their job.

Comments
Waltham's Post Construction Runoff Control Rules and Regulations are out of date and in need of revision. New engineering guidelines based on the Massachusetts DEP Storm Water Management Policy will help to correct the problem although it is not clear how the specifics will be applied. In any event they must incorporate non-point source pollution control for runoff from City owned and managed facilities like roads, parking lots, golf courses etc. A comprehensive plan would establish a watershed context for runoff control making full use of natural systems and processes and cooperating with other municipalities that occupy the same watershed. This approach uses source control to minimize runoff and pollution and promote localized groundwater recharge. It diminishes reliance on structural methods of stormwater management, i. e., detention basins, catch basins, manholes and pipes, thus reducing capital and O&M costs. The most significant benefit is improvement in water quality by mimicking the natural hydrologic processes of interception, infiltration, evapotranspiration, percolation, soil-water interaction and ground water recharge.

6. Pollution Prevention and Good Housekeeping in Municipal Operations
According to the Waltham Storm Water Management Plan there are 2 goals for the Pollution Prevention/Good Housekeeping control measure. First, the MS4 program is required to implement BMP's that collect and remove pollutants from municipally controlled areas such as roadways, parking areas and maintenance facilities. Second, controls must ensure that existing storm water management practices are not adversely impacting water quality. BMP's listed in the NOI to accomplish the goals are as follows:

BMP 26
Annual Catch Basin Cleaning
This is an ongoing activity of the DPW in Waltham. Cleaning maintains the capacity of the system to collect and store sediments and is a worthwhile activity although monitoring would be helpful in areas of high sediment loading to identify more frequent cleaning when needed.

BMP 27
Drain Cleaning
This is an ongoing activity that utilizes a drain cleaning and television truck to inspect sewers and storm drains. Currently it is used in a reactive fashion. It could be used proactively as part

of an ongoing comprehensive program to investigate suspected illicit discharges when evidence is identified by the watershed monitoring teams e. g., Adopt-A-Stream.

BMP 28
Annual Street Sweeping
Street Sweeping is an ongoing activity that is expected to reduce the amount of sediment, nutrients, heavy metals, floatable materials, sand, litter and large particulate matter that are deposited on city streets. This is a common practice that does prevent excessive amounts of sediment from entering the storm drain system. However, most of the pollutants on the pavement are washed off during so-called "first flush," events of approximately ½ inch of rainfall that carry the pollutants into receiving waters.

BMP 29
Recycling Program
This is ongoing program, as well, but it has marginal benefit for water quality improvement.

BMP 30
Watershed Maintenance Program
Initially this program is targeted for two streams, as yet unnamed, involving the removal of trash, sediment and other foreign debris for the purpose of improving water quality and stream capacity. Ultimately the program is to be extended to all streams in the City. This is the type of program can be conducted very cost effectively by citizen action groups like Adopt-A-Stream mentioned above in BMP 12. The City can provide backup support when needed for large or heavy items and for legal intervention. A good comprehensive watershed management plan can link opportunities like this to eliminate redundancy in the implementation phase.

Comments
Pollution prevention and good housekeeping implies the way that the program is implemented on a day-to-day basis. It includes management of the pollutant load running off from streets, parking areas, maintenance facilities, parks, lawns, walkways and buildings. There is a large nonpoint source pollution load identified above as pollutants of concern that are not adequately addressed in the BMPs listed in this NOI. The Storm Water Management Plan mentions a Source Control, Operations and Maintenance Plan to be developed in year 2 of the NPDES Phase II program. No mention is made, however, about using natural systems and processes to reduce runoff quantity and improve water quality as a source control strategy as recommended in the Massachusetts Small MS4 Program guidelines. The plan as described is to identify major sources of storm water pollution and explain how the impact of these sources can be mitigated. It will also formalize the schedule for street sweeping, catch basin cleaning and the rest of the O&M activities. Waiting until year two, however, to identify pollution sources is not acceptable. Identifying the major sources of storm water pollution should be the first thing done and it should be one of the driving forces, along with illicit connections, for setting goals and action plans in a systematic way.

Assigning a coordinator and including all town departments and outside cooperators to include the public at-large in a comprehensive stormwater management planning effort that first identifies the need and sets goals to address them is the way to move ahead. The plan would provide clearly defined roles and responsibilities and continual information exchange that are an essential component of a water quality improvement program. Annual training for all participants on program implementation, methods and interdepartmental cooperation would ensure that the house is in order, problems are being corrected and the critical job of water quality improvement is getting done to the maximum extent practicable.

Conclusion

Information in the Waltham NOI does not indicate that there is an aggressive program in place or being contemplated to mitigate ongoing pollution. It fails to meet the General Permit's requirements that the program reduce the discharge of pollutant to the maximum extent practicable, ensure that discharges will not cause an instream exceedance of water quality standards, or specifically identify control measures and BMPs that will control pollutants of concern for the following reasons:

1. Public Education

The objective of Public Education should be to change public behavior in a manner that will specifically benefit the water quality improvement program. Although Waltham has listed various venues for distributing information to the public no linkage is included to other aspects of the program to ensure that the information is timely and effective.

2. Public Participation

Water quality is everybody's responsibility but few are encouraged to become involved in the current Waltham program. For effective representation, the public needs to be included from the very beginning in identifying the issues and problems and setting goals and objectives for the program as well as being full participants in program implementation.

3. Illicit Discharge Detection and Elimination

Waltham does not have a comprehensive plan for identifying and eliminating sources of pollution and until it does, it is unlikely that water quality standards can be achieved. In the NOI submitted November 12, 2003, the city proposed to have an ordinance in place to detect and eliminate illicit discharges within a year. According to Waltham's Annual Report, the draft ordinance has not yet been submitted to the City Council for approval The NOI also proposes an illicit discharge detection program to investigate at least 40 outfalls per year when it needs to monitor all outfalls continuously in order to ensure compliance with water quality standards to the maximum extent practicable.

4. Construction Site Runoff Control

The City of Waltham has ordinances for Storm Water Management and Erosion and Sediment Control that it plans to enforce in response to NPDES Phase II requirements. The ordinance makes mention of several acceptable methods of runoff and erosion control without going into detail. In order to meet water quality standards to the maximum extent practicable, these guidelines must be updated to reference the Massachusetts Department of Environmental Protection Storm Water Management Policy Handbook and Best Management Practice Standards.

5. Post Construction Runoff Control

Waltham's Post Construction Runoff Control Rules and Regulations are out of date and in need of revision. New engineering guidelines based on the Massachusetts DEP Storm Water Management Policy will help to correct the problem. However, unless Post Construction Runoff Control views the City holistically, incorporating non-point source pollution control for the significant amount of runoff from City owned and managed facilities like roads, parking lots, municipal facilities, parks and golf courses it will not be possible to achieve state water quality standards to the maximum extent practicable.

6. Pollution Prevention and Municipal Good Housekeeping in Municipal Operations

Pollution prevention and good housekeeping implies the way that the program is implemented on a day-to-day basis. It should include management of the pollutant load running off from municipal streets, parking areas, maintenance facilities, parks, lawns, walkways and buildings. There is a large nonpoint source pollution load identified above as pollutants of concern that are not adequately addressed in the 5 simplistic BMPs listed above for Item 6: Pollution Prevention and Good Housekeeping in Municipal Operations. The Storm Water Management Plan mentions a Source Control, Operations and Maintenance Plan to be developed in year 2 of the NPDES Phase II program. No mention is made, however, about using natural systems and processes to reduce runoff quantity and improve water quality as a source control strategy as recommended in the Massachusetts Small MS4 Program guidelines.

Information in the Waltham NOI indicates that there are some strong program elements but no overall systematic strategy to mitigate ongoing pollution in the two issue areas, illicit connections and nonpoint source contamination. Illicit connections are under an EPA Violation Order with a specific Order for Compliance. No mention is made in the NOI of nonpoint source pollution from municipally controlled areas like streets and parking lots although it is mentioned in the Storm Water Management Plan. A much more aggressive approach will be needed to adequately eliminate the pollutants of concern and achieve acceptable water quality standards to the maximum extent practicable.